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

1.1 Product identifier

Trade name : ShellSol A100 Low Cumene

Product code : Q7591

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

EC-No. : 918-668-5

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

Use of the Sub- : Industrial Solvent.

stance/Mixture Please refer to section 16 and/or the annexes for the regis-

tered uses under REACH.

Uses advised against : This product must not be used in applications other than the

above without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier : Shell Chemicals Europe B.V.

PO Box 2334

3000 CH Rotterdam

Netherlands

Telephone : +31 (0)10 441 5137 / +31 (0)10 441 5191 Telefax : +31 (0)20 716 8316/ +31 (0)20 713 9230

Contact for Safety Data : sccmsds@shell.com

Sheet

1.4 Emergency telephone number

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

week)

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

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

Shell plc.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3 H226: Flammable liquid and vapour.

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

ways.

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Specific target organ toxicity - single exposure, Category 3, Respiratory Tract

H335: May cause respiratory irritation.

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

H336: May cause drowsiness or dizziness.

Long-term (chronic) aquatic hazard, Category 2

H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms







Signal word : Danger

Hazard statements : PHYSICAL HAZARDS:

H226 Flammable liquid and vapour.

HEALTH HAZARDS:

H304 May be fatal if swallowed and enters airways.

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

H411 Toxic to aquatic life with long lasting effects.

Supplemental Hazard

Statements

EUH066

Repeated exposure may cause skin dryness or

cracking.

Precautionary statements : Prevention:

P210 Keep away from heat, hot surfaces, sparks, open

flames and other ignition sources. No smoking. P243 Take action to prevent static discharges.

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

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

P331 Do NOT induce vomiting.

Storage:

No precautionary phrases.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

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2.3 Other hazards

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

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

May form flammable/explosive vapour-air mixture.

This material is a static accumulator.

Even with proper grounding and bonding, this material can still accumulate an electrostatic charge.

If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

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

Auditory system

SECTION 3: Composition/information on ingredients

3.1 Substances

Components

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

Further information

Contains:

Chemical name	Identification number	Classification	Concentration (% w/w)
Cumene	98-82-8, 202-704-5	Flam. Liq.3; H226 Asp. Tox.1; H304 STOT SE3; H335 Carc.1B; H350 Aquatic Chronic2; H411	>= 0 - <= 0.099
Benzene	71-43-2, 200-753-7	Flam. Liq.2; H225 Asp. Tox.1; H304 Skin Irrit.2; H315 Eye Irrit.2; H319 Muta.1B; H340 Carc.1A; H350 STOT RE1; H372 Aquatic Chronic3; H412	>= 0 - < 0.1

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SECTION 4: First aid measures

4.1 Description of first aid measures

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

conditions.

Protection of first-aiders : When administering first aid, ensure that you are wearing the

appropriate personal protective equipment according to the

incident, injury and surroundings.

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

transport to nearest medical facility for additional treatment.

In case of skin contact : Remove contaminated clothing. Immediately flush skin with

large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical

facility for additional treatment.

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

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

rinsing.

If persistent irritation occurs, obtain medical attention.

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

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

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing,

and/or difficulty breathing.

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

death.

Skin irritation signs and symptoms may include a burning sen-

sation, redness, or swelling.

No specific hazards under normal use conditions.

Eye irritation signs and symptoms may include a burning sen-

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

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

If any of the following delayed signs and symptoms appear within the next 6 hours, transport to the nearest medical facility: fever greater than 101° F (38.3°C), shortness of breath, chest congestion or continued coughing or wheezing.

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

Auditory system effects may include temporary hearing loss and/or ringing in the ears.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Call a doctor or poison control center for guidance.

Potential for chemical pneumonitis.

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon diox-

ide, sand or earth may be used for small fires only.

Unsuitable extinguishing

media

Do not use water in a jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

Clear fire area of all non-emergency personnel. Hazardous combustion products may include:

A complex mixture of airborne solid and liquid particulates and

gases (smoke). Carbon monoxide.

Unidentified organic and inorganic compounds.

Flammable vapours may be present even at temperatures

below the flash point.

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

distant ignition is possible.

Will float and can be reignited on surface water.

5.3 Advice for firefighters

Special protective equipment :

for firefighters

Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to

relevant Standards (e.g. Europe: EN469).

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Specific extinguishing meth-

ods

Standard procedure for chemical fires.

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions

Observe all relevant local and international regulations.

Notify authorities if any exposure to the general public or the

environment occurs or is likely to occur.

Local authorities should be advised if significant spillages

cannot be contained.

6.1.1 For non emergency personnel: Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

Do not breathe fumes, vapour. Do not operate electrical equipment. 6.1.2 For emergency responders:

Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

Do not breathe fumes, vapour. Do not operate electrical equipment.

6.2 Environmental precautions

Environmental precautions

Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bond-

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

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : For small liquid spills (< 1 drum), transfer by mechanical

means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove

contaminated soil and dispose of safely.

For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak

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up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely

Ventilate contaminated area thoroughly.

If contamination of site occurs remediation may require spe-

cialist advice.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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

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

Section 8 of this Safety Data Sheet.

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

material.

Ensure that all local regulations regarding handling and stor-

age facilities are followed.

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

Avoid contact with skin, eyes and clothing.

Extinguish any naked flames. Do not smoke. Remove ignition

sources. Avoid sparks.

Use local exhaust ventilation if there is risk of inhalation of

vapours, mists or aerosols.

Bulk storage tanks should be diked (bunded).

When using do not eat or drink.

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

distant ignition is possible.

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

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

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compressed air for filling, discharging, or handling operations.

Refer to guidance under Handling section.

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

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

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

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

ering the packaging and storage of this product.

Further information on storage stability

Storage Temperature:

Ambient.

Bulk storage tanks should be diked (bunded).

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

strict procedures and precautions.

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

harmful or toxic to man or to the environment.

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

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

ble.

The storage of this product may be subject to the Control of Pollution (Oil Storage) (England) Regulations. Further guidance may be obtained from the local environmental agency

office.

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:

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American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices

on Static Electricity).

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Cumene	98-82-8	TWA	25 ppm 125 mg/m3	GB EH40
			bed through the skin. The as	
	stances are the lead to system		are concerns that dermal abs	sorption will
Cumene		STEL	50 ppm 250 mg/m3	GB EH40
		nose for which there	bed through the skin. The as are concerns that dermal abs	
Cumene		TWA	10 ppm	2019/1831/E
			50 mg/m3	U
		licates the possibility	n assigned to the occupation of significant uptake through	
Cumene		STEL	50 ppm 250 mg/m3	2019/1831/E U
			n assigned to the occupation of significant uptake through	
Cumene		TWA	5 ppm	ACGIH
Benzene	71-43-2	TWA	1 ppm 3.25 mg/m3	GB EH40
	stances are th	nose for which there nic toxicity., Capable	bed through the skin. The as are concerns that dermal abs of causing cancer and/or he	sorption will ritable genetic
Benzene		TWA	0.25 ppm 0.8 mg/m3	Shell Internal Standard (SIS) for 8-12 hour TWA.
Benzene		STEL	2.5 ppm 8 mg/m3	Shell Internal Standard (SIS) for 15 min (STEL)
Benzene		TWA	0.5 ppm	ACGIH
Benzene		STEL	2.5 ppm	ACGIH

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Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Benzene	71-43-2	S- Phenylmercapturic acid: 25 µg/g creat- inine (Urine)	End of shift (As soon as possible after exposure ceases)	ACGIH BEI
		t,t-Muconic acid: 500 µg/g creatinine (Urine)	End of shift (As soon as possible after exposure ceases)	ACGIH BEI

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

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

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

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

8.2 Exposure controls

Engineering measures

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

Use sealed systems as far as possible.

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

Local exhaust ventilation is recommended.

Firewater monitors and deluge systems are recommended.

Eye washes and showers for emergency use.

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

General Information:

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective

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equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

Define procedures for safe handling and maintenance of controls.

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

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

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

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

Personal protective equipment

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

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

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

protective eyewear is recommended. Approved to EU Standard EN166.

Hand protection

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

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

rubber Nitrile rubber gloves.

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

izer is recommended.

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

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use.

For prolonged or repeated exposures use impervious clothing

over parts of the body subject to exposure.

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

ard, and provide employee skin care programmes.

Protective clothing approved to EU Standard EN14605.

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

assessment deems it so.

Respiratory protection If engineering controls do not maintain airborne concentra-

> tions to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing appa-

ratus.

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

priate combination of mask and filter.

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

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state Liquid.

Colour colourless

Odour aromatic

Odour Threshold Data not available

Melting point/freezing point Data not available

150 - 185 °C Boiling point/boiling range

Flammability

Flammability (solid, gas) Not applicable

Flammability (liquids) Flammable liquid and vapour.

Lower explosion limit and upper explosion limit / flammability limit

: 7 %(V) Upper explosion limit /

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upper flammability limit

Lower explosion limit / Lower flammability limit

0.6 %(V)

Flash point : 38 - 50 °C

Method: IP 170

Auto-ignition temperature : 507 °C

Decomposition temperature

Decomposition tempera-

ture

Data not available

pH : Data not available

Viscosity

Viscosity, dynamic : Data not available

Viscosity, kinematic : Typical 0.9 mm2/s (25 °C)

Method: ASTM D445

Solubility(ies)

Water solubility : insoluble

Partition coefficient: n-

octanol/water

log Pow: 3.7 - 4.5

Vapour pressure : 210 - 1,300 Pa (20 °C)

Relative density : 0.87 - 0.88 (20 °C)

Method: ASTM D4052

Density : Typical 876 kg/m3 (15 °C)

Method: ASTM D4052

Relative vapour density : 4.3

Particle characteristics

Particle size : Data not available

9.2 Other information

Explosive properties : Not applicable

Oxidizing properties : Data not available

Flammability (liquids) : Flammable liquid and vapour.

Evaporation rate : < 1

Method: ASTM D 3539, nBuAc=1

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Conductivity: < 100 pS/m

The conductivity of this material makes it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 400 p.S./m and is considered again.

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

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

can greatly influence the conductivity of a liquid

Surface tension : Data not available

Molecular weight : Data not available

SECTION 10: Stability and reactivity

10.1 Reactivity

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

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

10.4 Conditions to avoid

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

In certain circumstances product can ignite due to static elec-

tricity.

10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.

10.6 Hazardous decomposition products

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

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

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,

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exposure skin or eye contact, and accidental ingestion.

Acute toxicity

Components:

Hydrocarbons, C9, aromatics:

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

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

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

Exposure time: 4 h
Test atmosphere: vapour

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

403

Remarks: LC50 greater than near-saturated vapour concen-

tration.

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

Acute dermal toxicity : LD 50 (Rabbit, male and female): > 2,000 mg/kg

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

402

Remarks: Based on available data, the classification criteria

are not met.

Skin corrosion/irritation

Components:

Hydrocarbons, C9, aromatics:

Species : Rabbit

Method : OECD Test Guideline 404

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

Repeated exposure may cause skin dryness or cracking.

Serious eye damage/eye irritation

Components:

Hydrocarbons, C9, aromatics:

Species : Rabbit

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

Remarks : Slightly irritating.

Insufficient to classify.

Respiratory or skin sensitisation

Components:

Hydrocarbons, C9, aromatics:

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Species : Guinea pig

Method : OECD Test Guideline 406

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

Germ cell mutagenicity

Components:

Hydrocarbons, C9, aromatics:

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

Remarks: Based on available data, the classification criteria

are not met.

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

473

Remarks: Based on available data, the classification criteria

are not met.

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

476

Remarks: Based on available data, the classification criteria

are not met.

Genotoxicity in vivo : Species: Rat

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

4/5

Remarks: Based on available data, the classification criteria

are not met.

Germ cell mutagenicity- As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

Carcinogenicity

Components:

Hydrocarbons, C9, aromatics:

Remarks : Tumours produced in animals are not considered relevant to

humans.

Not a carcinogen.

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

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification
Hydrocarbons, C9, aromatics	No carcinogenicity classification.
Cumene	Carcinogenicity Category 1B
Benzene	Carcinogenicity Category 1A

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

Reproductive toxicity

Components:

Hydrocarbons, C9, aromatics:

Effects on fertility Species: Rat

> Sex: male and female Application Route: Inhalation

Method: Other guideline method.

Remarks: Based on available data, the classification criteria

are not met.

Reproductive toxicity - As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

STOT - single exposure

Components:

Hydrocarbons, C9, aromatics:

Exposure routes Inhalation

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

May cause respiratory irritation.

STOT - repeated exposure

Components:

Hydrocarbons, C9, aromatics:

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

Auditory system: prolonged and repeated exposures to high

concentrations have resulted in hearing loss in rats.

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

sidered relevant to humans

Repeated dose toxicity

Components:

Hydrocarbons, C9, aromatics:

Species Rat, male and female

Application Route Oral

Method Test(s) equivalent or similar to OECD Test Guideline 408

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Target Organs : No specific target organs noted

Species : Rat, male and female

Application Route : Inhalation Test atmosphere : vapour

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

Target Organs : No specific target organs noted

Aspiration toxicity

Components:

Hydrocarbons, C9, aromatics:

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

11.2 Information on other hazards

Endocrine disrupting properties

Product:

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

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

levels of 0.1% or higher.

Further information

Product:

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

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

ponent(s).

Components:

Hydrocarbons, C9, aromatics:

Remarks : Classifications by other authorities under varying regulatory

frameworks may exist.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Hydrocarbons, C9, aromatics:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 9.2 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

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Remarks: Toxic

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

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): 3.2 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Remarks: Toxic

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

Toxicity to algae/aquatic plants : ErL50 (Pseudokirchneriella subcapitata (algae)): 2.9 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

Remarks: Toxic

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

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

Exposure time: 0.16 h

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

Toxicity to fish (Chronic tox-

icity)

Remarks: Data not available

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

Remarks: Data not available

12.2 Persistence and degradability

Components:

Hydrocarbons, C9, aromatics:

Biodegradability : Biodegradation: 78 %

Exposure time: 28 d

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

Oxidises rapidly by photo-chemical reactions in air.

12.3 Bioaccumulative potential

Components:

Hydrocarbons, C9, aromatics:

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

12.4 Mobility in soil

Components:

Hydrocarbons, C9, aromatics:

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

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particles and will not be mobile.

12.5 Results of PBT and vPvB assessment

Components:

Hydrocarbons, C9, aromatics:

Assessment : The substance does not fulfill all screening criteria for persis-

tence, bioaccumulation and toxicity and hence is not consid-

ered to be PBT or vPvB..

12.6 Endocrine disrupting properties

Product:

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

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

12.7 Other adverse effects

Product:

Additional ecological infor-

mation

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

Components:

Hydrocarbons, C9, aromatics:

Additional ecological infor-

mation

: Does not have ozone depletion potential.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Recover or recycle if possible.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal meth-

ods in compliance with applicable regulations.

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.

Do not dispose into the environment, in drains or in water

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

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collector or contractor should be established beforehand.

Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional,

national, and local laws and regulations.

Local regulations may be more stringent than regional or na-

tional requirements and must be complied with.

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

nical aspects at controlling pollutions from ships.

Contaminated packaging : Drain container thoroughly.

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

cut or weld uncleaned drums.

Send to drum recoverer or metal reclaimer.

Comply with any local recovery or waste disposal regulations.

Local legislation

Remarks : Hazardous Waste (England and Wales) Regulations 2005.

SECTION 14: Transport information

14.1 UN number or ID number

ADR : 1268 RID : 1268 IMDG : 1268 IATA : 1268

14.2 UN proper shipping name

ADR : PETROLEUM DISTILLATES, N.O.S.

RID : PETROLEUM DISTILLATES, N.O.S.

IMDG : PETROLEUM DISTILLATES, N.O.S.

(NAPHTHA)

IATA : Petroleum distillates, n.o.s.

14.3 Transport hazard class(es)

ADR : 3
RID : 3
IMDG : 3
IATA : 3

14.4 Packing group

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ADR

Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

RID

Packing group : III
Classification Code : F1
Hazard Identification Number : 30
Labels : 3

IMDG

Packing group : III Labels : 3

IATA

Packing group : III Labels : 3

14.5 Environmental hazards

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

14.6 Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage,

for special precautions which a user needs to be aware of or

needs to comply with in connection with transport.

14.7 Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

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

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

space entry.

SECTION 15: Regulatory information

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

REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) Conditions of restriction for the following entries should be considered: Cumene (Number on list 28)

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Benzene (Number on list 72, 5, 29,

REACH - Candidate List of Substances of Very High

Concern for Authorisation (Article 59).

This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

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

Product is not subject to Authorisa-

tion under REACH.

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

P5c

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E2 **ENVIRONMENTAL HAZARDS**

Other regulations:

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

Environmental Protection Act 1990 (as amended). Health and Safety at Work etc. Act 1974. Consumers Protection Act 1987. Pollution Prevention and Control Act 1999. Environment Act 1995. Factories Act 1961. The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment (Amendment) Regulations 2011. Chemicals (Hazard Information and Packaging for Supply) Regulations 2009. Control of Substances Hazardous to Health Regulations 2002 (as amended). Merchant Shipping (Dangerous Goods and Marine Pollutants) Regulations 1997. Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (as amended). Personal Protective Equipment Regulations 2002. Personal Protective Equipment at Work Regulations 1992. Hazardous Waste (England and Wales) Regulations 2005(as amended). Control of Major Accident Hazards Regulations 1999 (as amended). Renewable Transport Fuel Obligations Order 2007 (as amended). Energy Act 2011. Environmental Permitting (England and Wales) Regulations 2010 (as amended). Waste (England and Wales) Regulations 2011 (as amended). Planning (Hazardous Substances) Act 1990 and associated regulations. The Environmental Protection (Controls on Ozone-Depleting Substances) Regulations 2011.

Product is subject to the Control of Major Accident Hazards Regulations 2015 (2015 No. 483) based on Seveso III directive (2012/18/EU).

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

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

DSL Listed

IECSC Listed

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TSCA : Listed

KECI : Listed

PICCS : Listed

TCSI : Listed

AIIC : Listed

NZIoC : Listed

15.2 Chemical safety assessment

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

SECTION 16: Other information

Full text of other abbreviations

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

fifth list of indicative occupational exposure limit values

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)
GB EH40 : UK. EH40 WEL - Workplace Exposure Limits

2019/1831/EU / TWA : Limit Value - eight hours
2019/1831/EU / STEL : Short term exposure limit
ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit

GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)
GB EH40 / STEL : Short-term exposure limit (15-minute reference period)

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

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Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

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

erators.

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

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

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

ered to be PBT or vPvB.

A vertical bar (|) in the left margin indicates an amendment from the previous version.

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

This product is classified as R66 / EUH066 (Repeated exposure may cause skin dryness or cracking). The risk relates to the potential for repeated or prolonged dermal contact. The risk arising from contact is solely related to the physicochemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific hazard and included within Section 8 of the SDS. An exposure scenario is not presented.

Sources of key data used to compile the Safety Data Sheet

The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID date base, EC 1272 regulation, etc).

Identified Uses according to the Use Descriptor System Uses - Worker

Title : Manufacture of substance

- Industrial

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Uses - Worker

Title : Distribution of substance

- Industrial

Uses - Worker

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

- Industrial

Uses - Worker

Title : Uses in Coatings

- Industrial

Uses - Worker

Title : Use in Cleaning Agents

- Industrial

Uses - Worker

Title : Uses in Coatings

- Professional

Uses - Worker

Title : Use in Cleaning Agents

- Professional

Uses - Worker

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

- Industrial

Uses - Worker

Title : Lubricants

- Industrial

Uses - Worker

Title : Lubricants

- Professional

Low Environmental Release

Uses - Worker

Title : Lubricants

- Professional

High Environmental Release

Uses - Worker

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Title : Metal working fluids / rolling oils

- Industrial

Uses - Worker

Title : Metal working fluids / rolling oils

- Professional

Uses - Worker

Title : Use as binders and release agents

- Industrial

Uses - Worker

Title : Use as binders and release agents

- Professional

Uses - Worker

Title : Use in Agrochemicals uses

- Professional

Uses - Worker

Title : Use as a fuel

- Industrial

Uses - Worker

Title : Use as a fuel

- Professional

Uses - Worker

Title : Functional Fluids

- Professional

Uses - Worker

Title : Functional Fluids

- Industrial

Uses - Worker

Title : Road and construction applications

- Professional

Uses - Worker

Title : Use in laboratories

- Industrial

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Uses - Worker

Title : Use in laboratories

- Professional

Uses - Worker

Title : Water treatment chemicals

- Industrial

Uses - Worker

Title : Water treatment chemicals

- Professional

Identified Uses according to the Use Descriptor System

Uses - Consumer

Title : Functional Fluids

- Consumer

Uses - Consumer

Title : Use as a fuel

- Consumer

Uses - Consumer

Title : Use in Agrochemicals uses

- Consumer

Uses - Consumer

Title : Lubricants

- Consumer

High Environmental Release

Uses - Consumer

Title : Lubricants

- Consumer

Low Environmental Release

Uses - Consumer

Title : Use in Cleaning Agents

- Consumer

Uses - Consumer

Title : Uses in Coatings

- Consumer

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

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Exposure Scenario - Worker

Exposure occitatio Works	-
30000000750	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Manufacture of substance- Industrial
Use Descriptor	Sector of Use: SU3, SU8, SU9 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 15 Environmental Release Categories: ERC1, ERC4, ESVOC SpERC 1.1.v1
Scope of process	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

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

Contributing Scenarios	Risk Management Measures
General exposures (closed	No other specific measures identified.
systems)PROC1PROC2PRO	
General exposures (open sys tems)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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Cubatanas is sampled IN/OD	T
Substance is complex UVCB.	
Predominantly hydrophobic.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0.1
Regional use tonnage (tonnes/year):	2.4E+04
Fraction of Regional tonnage used locally:	1
Annual site tonnage (tonnes/year):	2.4E+04
Maximum daily site tonnage (kg/day):	7.9E+04
Frequency and Duration of Use	
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):	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 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	J ,
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide	15.9
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93.6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93.6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	1.0E+06
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	1.0E+04
Conditions and Measures related to external treatment of waste fo	r disposal
During manufacturing no waste of the substance is generated.	

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During manufacturing no waste of the substance is generated.

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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

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Exposure Scenario - Worker

Exposure occinano Wor	
30000000753	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Distribution of substance- Industrial
Use Descriptor	Sector of Use: SU3, SU8, SU9
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4,
	PROC 8a, PROC 8b, PROC 9, PROC 15
	Environmental Release Categories: ERC1, ERC2, ERC3,
	ERC4, ERC5, ERC6a, ERC6b, ERC 6C,, ERC7, ESVOC
	SpERC 1.1b.v1
Scope of process	Loading (including marine vessel/barge, rail/road car and IBC
	loading) and repacking (including drums and small packs) of
	substance, including its sampling, storage, unloading distribu-
	tion and associated laboratory activities.
	, and a second s

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

Assumes a good basic standard of occupational hygiene is implemented.

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

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Section 2.2 Control of Environmental Exposure	
Substance is complex UVCB.	
Predominantly hydrophobic.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0.1
Regional use tonnage (tonnes/year):	850
Fraction of Regional tonnage used locally:	2.0E-03
Annual site tonnage (tonnes/year):	1.7
Maximum daily site tonnage (kg/day):	85
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	20
Environmental factors not influenced by risk management	-
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	•
Release fraction to air from process (initial release prior to RMM):	1.0E-03
Release fraction to wastewater from process (initial release prior to	1.0E-05
RMM):	
Release fraction to soil from process (initial release prior to RMM):	1.0E-05
Technical conditions and measures at process level (source) to p	revent release
Common practices vary across sites thus conservative process re-	
Common practices vary across sites thus conservative process re-	
Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit dischains and releases to soil	
Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit dischains and releases to soil Risk from environmental exposure is driven by freshwater.	
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Common practices vary across sites thus conservative process re- ease estimates used. Technical onsite conditions and measures to reduce or limit discresions and releases to soil Risk from environmental exposure is driven by freshwater. Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment period 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	90 0 0 0 0 0 0 0 0 2.1E+05 2.0E+03

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Conditions and measures related to external recovery of waste

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

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 -Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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

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Exposure Scenario - Worker

30000000754		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Formulation & (re)packing of substances and mixtures- Industrial	
Use Descriptor	Sector of Use: SU3, SU10 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 14, PROC 15 Environmental Release Categories: ERC2, ESVOC SpERC 2.2.v1	
Scope of process	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.	

OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Control of Worker Exposure
Liquid, vapour pressure < 0.5 kPa at STP
Covers use of substance/product up to 100% (unless stated differently).,
Use
8 hours (unless stated differently).
ns affecting Exposure
an 20°C above ambient temperature (unless stated differently).

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Risk Management Measures	
General exposures (closed systems)PROC1PROC2PRO	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). Use in contained batch processesPROC3	ure er-	
Process samplingPROC3	No other specific measures identified.	
Laboratory activitiesPROC15	No other specific measures identified.	
Bulk transfersPROC8b	No other specific measures identified.	

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Mixing operations (open systems)PROC5 ManualTransfer from/pouring from containersPROC8b Production or preparation or articles by tabletting, compression, extrusion or pelletisationPROC14 Drum/batch transfersPROC8a Production or preparation or articles by tabletting, compression, extrusion or pelletisationPROC14 Drum and small package fillingPROC9 Equipment cleaning and maintenancePROC8a Storage.PROC1PROC2 Store substance within a closed system. Section 2.2 Control of Environmental Exposure Substance is complex UVCB. Predominantly hydrophobic. Readily biodegradable. Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year): Maximum daily site tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): Release fraction to soil from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to provide a typical removal efficiency of (%) Treat air emission to provide a typical removal efficiency of provide of the required removal efficiency of >= (%) Treat air emission to provide a typical removal efficiency of to the required removal efficiency of >= (%) Treat onsite wastewater (prior to receiving water discharge) to provide of the required removal efficiency of >= (%)			
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Trom containersPRCC8a Drum/batch transfersPROC8b Production or preparation or articles by tabletting, compression, extrusion or pelletisationPROC14 Tromain and small package fillingPROC9 Equipment cleaning and maintenancePROC8a Storage.PROC1PROC2 Store substance within a closed system. Section 2.2 Control of Environmental Exposure Substance is complex UVCB. Predominantly hydrophobic. Readily biodegradable. Amounts Used Fraction of EU tonnage used in region: 0.1 Regional use tonnage (tonnes/year): 730 Fraction of Regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 730 Maximum daily site tonnage (kg/day): 7.3E+03 Frequency and Duration of Use Continuous release. Emission Days (days/year): 100 Environmental factors not influenced by risk management Local freshwater dilution factor: 100 Chher Operational Conditions affecting Environmental Exposure Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): Release fraction to soil from process (initial release prior to RMM): 1.0E-04 Technical conditions and measures at process level (source) to prevent release company consistent with EU Solvent Emissions Directive requirements): Release fraction to soil from process (initial release prior to RMM): 1.0E-04 Technical conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide 0 Treat onsite wastewater (prior to receiving water discharge) to provide 0		No other specific measures identified	d.
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Readily biodegradable. Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year): Maximum daily site tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): 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 (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): 1.0E-04 Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)			
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			0

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wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93.6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93.6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	3.1E+05
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable	local and/or regional
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	

SECTION 3	EXPOSURE ESTIMATION			
Section 3.1 - Health				
		_	-	

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 - Environment

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

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

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

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

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(http://cefic.org).

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Exposure Scenario - Worker

Exposure Scenario - Worke	51
30000000755	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 14, PROC 15 Environmental Release Categories: ERC4, ESVOC SpERC 4.3a.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

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

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sures (closed sys-		
tems)PROC3		
Film formation - air dry- ingPROC4	No other specific measures identified.	
Preparation of material for	No other specific measures identified.	
applicationMixing opera-	·	
tions (open sys-		
tems)PROC5		
Spraying (automat- ic/robotic)PROC7	Carry out in a vented booth provided with	laminar airflow.
ManualSprayingPROC7	Wear a respirator conforming to EN140 w better.	vith Type A filter or
Material transfersNon- dedicated facilityPROC8a	No other specific measures identified.	
Material transfersDedicated facilityPROC8b	No other specific measures identified.	
Roller, spreader, flow applicationPROC10	No other specific measures identified.	
Dipping, immersion and pouringPROC13	No other specific measures identified.	
Laboratory activi- tiesPROC15	No other specific measures identified.	
Material trans-	No other specific measures identified.	
fersDrum/batch transfer-	·	
sTransfer from/pouring from		
containersPROC9		
Production or preparation	No other specific measures identified.	
or articles by tabletting,		
compression, extrusion or		
pelletisationPROC14		
Equipment cleaning and maintenancePROC8a	No other specific measures identified.	
Storage.PROC1	Store substance within a closed system.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0.1
Regional use tonnage (tonnes/year): 7.6E+03		
Fraction of Regional tonnage used locally:		
	Annual site tonnage (tonnes/year): 7.6E+03	
	Maximum daily site tonnage (kg/day): 2.5E+04	
Frequency and Duration of		
Continuous release.		
Emission Days (days/year):		300
Environmental factors not influenced by risk management		
Local freshwater dilution factor		10
Local marine water dilution fa		100
Local manne water unution is	iotoi.	100

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Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	9.8E-01
Release fraction to wastewater from process (initial release prior to	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 pre	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.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide	77.7
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93.6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93.6
Maximum allowable site tonnage (MSafe) based on release following	8.8E+04
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable regulations.	local and/or regional
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	

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

indicated.

Section 3.2 - Environment

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

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SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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

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Exposure Scenario - Worker

30000000757	NOT
OF OTION 4	EVECULES COSMADIO TITLE
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents- Industrial
Use Descriptor	Sector of Use: SU3
-	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4,
	PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13
	Environmental Release Categories: ERC4, ESVOC SpERC
	4.4a.v1
Scope of process	Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

SECTION 2	OPERATIONAL CONDITIONS AND 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 that	an 20°C above ambient temperature (unless stated differently).	
A	land of a competition of boundary is incompany out of	

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios Risk Management Measures Bulk transfersNon-dedicated fa-No other specific measures identified. cilityPROC8a Automated process with (semi) No other specific measures identified. closed systems. Use in contained systemsPROC2 Automated process with (semi) No other specific measures identified. closed systems. Drum/batch transfersUse in contained batch processesPROC3 Application of cleaning products in No other specific measures identified. closed systemsPROC2 Filling/ preparation of equipment No other specific measures identified. from drums or containers.PROC8b Use in contained batch process-No other specific measures identified. esPROC4

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Degreasing small objects in cleaning stationPROC13	in No other specific measures identified.	
Cleaning with low-pressure washersPROC10	No other specific measures identifi	ed.
Cleaning with high pressure	Provide a good standard of genera	l ventilation (not less than
washersPROC7	3 to 5 air changes per hour).	·
	Limit the substance content in the	product to 5 %.
ManualSurfacesCleaningPROC10	No other specific measures identifi	ed.
Storage.PROC1	Store substance within a closed sy	rstem.
	trol of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in reg		0.1
Regional use tonnage (tonnes/year		320
Fraction of Regional tonnage used	locally:	3.2E-01
Annual site tonnage (tonnes/year):		100
Maximum daily site tonnage (kg/da	y):	5.0E+03
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		20
Environmental factors not influe	nced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions aff		
Release fraction to air from process		1.0
Release fraction to wastewater from RMM):		3.0E-06
Release fraction to soil from proces	ss (initial release prior to RMM):	0
	res at process level (source) to pre	event release
Common practices vary across site lease estimates used.	s thus conservative process re-	
Technical onsite conditions and sions and releases to soil	measures to reduce or limit discha	arges, air emis-
Risk from environmental exposure	is driven by freshwater.	
Prevent discharge of undissolved s		
wastewater.		
No wastewater treatment required.		
Treat air emission to provide a typical removal efficiency of (%)		70
Treat onsite wastewater (prior to re		0
the required removal efficiency of >		
If discharging to domestic sewage	reatment plant, no secondary	0
wastewater treatment required.		
Organisational measures to prev		
Do not apply industrial sludge to na		
Sludge should be incinerated, conta	ained or reclaimed.	

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Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage	93.6	
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite	93.6	
(domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following	8.3E+06	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03	
_	•	

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

indicated.

Section 3.2 - Environment

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

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

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

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

Section 4.2 - Environment

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

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

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

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

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Exposure Scenario - Worker

30000000756	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13, PROC 15, PROC 19 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.3b.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities.

SECTION 2	OPERATIONAL CONDITIONS AND 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.

About test a good basic standard or occupational riggions is implemented.	
Contributing Scenarios	Risk Management Measures
General exposures (closed systems)PROC1	No other specific measures identified.
Filling/ preparation of equipme from drums or containers.Use contained systemsPROC2	
General exposures (closed systems)Use in contained systemsPROC2	No other specific measures identified.
Preparation of material for app cationUse in contained batch processesPROC3	li- No other specific measures identified.
Film formation - air dry- ingOutdoorPROC4	No other specific measures identified.
Film formation - air dryingln-doorPROC4	No other specific measures identified.

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

Section 2.2	Control of Environmental Expos	sure
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.	Readily biodegradable.	
Amounts Used		
Fraction of EU tonnage used	in region:	0.1
Regional use tonnage (tonne	s/year):	2.2E+03
Fraction of Regional tonnage used locally: 5.0E-04		5.0E-04
Annual site tonnage (tonnes/year): 1.1		
Maximum daily site tonnage (kg/day):	3.0

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Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	300
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	100
Release fraction to air from wide dispersive use (regional only):	9.8E-01
Release fraction to wastewater from wide dispersive use:	1.0E-02
Release fraction to soil from wide dispersive use (regional only):	1.0E-02
Technical conditions and measures at process level (source) to pr	
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges air emis-
sions and releases to soil	arges, an emis-
Risk from environmental exposure is driven by freshwater.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
ordago oriodia do momeratoa, contamoa or rociamoa.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93.6
treatment (%)	00.0
Total efficiency of removal from wastewater after onsite and offsite	93.6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	4.7E+03
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03
Conditions and Measures related to external treatment of waste fo	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 regiona
regulations.	

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

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Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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

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Exposure Scenario - Worker

Exposure operation worker	
3000000758	
SECTION 1 EXPOSURE SCENARIO TITLE	
Title	Use in Cleaning Agents- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4b.v1
Scope of process	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Section 2.1	Control of Worker Exposure
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	
Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC8b	nt No other specific measures identified.	
Filling/ preparation of equipmer from drums or containers.Non-dedicated facilityPROC8a		
Automated process with (semi) closed systems.Use in contain systemsPROC2	·	
Automated process with (semi) closed systems.Drum/batch trafersUse in contained batch processesPROC3	ns-	
Semi Automated process. (e.g. Semi automatic application of f care and maintenance products)PROC4		

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ManualSurfacesCleaningDipping, immersion and pouringPROC13	No other specific measures identified.
ManualSurfacesCleaningPROC13	No other specific measures identified.
Cleaning with low-pressure washers ers Rolling, Brushing no spraying PROC10	No other specific measures identified.
Cleaning with high pressure washersSprayingIndoorPROC11	Limit the substance content in the product to 1 %.
Cleaning with high pressure washersSprayingOutdoorPROC11	Limit the substance content in the product to 1 %.
ManualSurfacesCleaningPROC10	Limit the substance content in the product to 25 %.
Ad hoc manual application via trigger sprays, dipping, etc.Rolling, BrushingPROC10	Limit the substance content in the product to 25 %.
Application of cleaning products in closed systemsPROC4	No other specific measures identified.
Cleaning of medical devic- esPROC4	No other specific measures identified.
Storage.PROC1	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	_
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	n region:	0.1
Regional use tonnage (tonnes	s/year):	2.0
Fraction of Regional tonnage	used locally:	5.0E-04
Annual site tonnage (tonnes/y		1.0E-03
Maximum daily site tonnage (kg/day):	2.7E-03
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
	nfluenced by risk management	
Local freshwater dilution factor	r:	10
Local marine water dilution fa	ctor:	100
	ns affecting Environmental Exposure	
	de dispersive use (regional only):	2.0E-02
Release fraction to wastewate		1.0E-06
	vide dispersive use (regional only):	0
Technical conditions and measures at process level (source) to prevent release		event release
	s sites thus conservative process re-	
lease estimates used.		
	and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		<u> </u>
Risk from environmental expo		
No wastewater treatment requ		
-	a typical removal efficiency of (%)	0
Treat onsite wastewater (prior	to receiving water discharge) to provide	0

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the required removal efficiency of >= (%)		
If discharging to domestic sewage treatment plant, no secondary	0	
wastewater treatment required.		
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures related to municipal sewage treatment p	lant	
Estimated substance removal from wastewater via domestic sewage	93.6	
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite	93.6	
(domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following	7.1	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03	
Conditions and Measures related to external treatment of waste fo	r disposal	
External treatment and disposal of waste should comply with applicable local and/or regional		
regulations.		
Conditions and measures related to external recovery of waste		
External recovery and recycling of waste should comply with applicable regulations.	local and/or regional	
1 9		

	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	

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.

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

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

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

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or in combination.

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

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Exposure Scenario - Worker

equipment - vapour expo-

Treatment and disposal of

filtered solidsPROC3
Process samplingPROC3

suresPROC4

	Exposure decirate Worker	
30000000783		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use in Oil and Gas field drilling and production operations-	
	Industrial	
Use Descriptor	Sector of Use: SU3	
	Process Categories: PROC 1, PROC 2, PROC 3, PROC 4,	
	PROC 8a, PROC 8b	
	Environmental Release Categories: ERC4	
	g	
Scope of process	Oil field well drilling and production operations (including drilling muds and well cleaning) including material transfers, onsite formulation, well head operations, shaker room activities and related maintenance.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Additional Information	No exposure assessment presented for the environment.
Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of	Use
	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.
Filling/ preparation of	No other specific measures identified.
equipment from drums or	·
containers.Dedicated facili- tyPROC8b	
Drilling mud (re-)formulationPROC3	No other specific measures identified.
jionnalationi 1000	A. (1 10)
Drill floor operationsPROC4	No other specific measures identified.

No other specific measures identified.

No other specific measures identified.

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

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

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

Section 3.2 - Environment

No exposure assessment presented for the environment.

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

Qualitative approach used to conclude safe use.

	SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Section 4.1 - Health		
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management	
Measures/Operational Conditions outlined in Section 2 are implement		ions outlined in Section 2 are implemented

Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

No exposure assessment presented for the environment.

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Exposure Scenario - Worker

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

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of	Use	
Covers daily exposures up to	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 General exposures (closed No other specific measures identified. systems)PROC1PROC2PROC3 General exposures (open sys-No other specific measures identified. tems)PROC4 Bulk transfersDedicated facili-No other specific measures identified. tyPROC8b Filling/ preparation of equipment No other specific measures identified. from drums or containers.Nondedicated facilityPROC8a Filling/ preparation of equipment No other specific measures identified. from drums or containers.Dedicated facilityPROC8b Initial factory fill of equip-No other specific measures identified. mentPROC9 Operation and lubrication of No other specific measures identified. high energy open equipmentPROC17PROC18

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ManualRolling, BrushingPROC10		No other specific measures identified	d.
Treatment by dipping and pour- ingPROC13		No other specific measures identified	d.
SprayingPROC7		Carry out in a vented booth or extract	cted enclosure.
Maintenance (of larger plant items) and machine set upDedicated facilityPROC8b		No other specific measures identified	d.
Maintenance (of larger plant items) and machine set upOp eration is carried out at elevat temperature (> 20°C above ambient temperature). Dedicated facilityPROCS	ted 3b	Drain down and flush system prior to maintenance.	equipment opening or
Maintenance of small itemsNo dedicated facilityPROC8a	on-	No other specific measures identified	d.
Remanufacture of reject articlesPROC9		No other specific measures identified	d.
Storage.PROC1PROC2		Store substance within a closed syst	tem.
Section 2.2		ntrol of Environmental Exposure	
Substance is complex UVCB.			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			1
		-1	104
Fraction of EU tonnage used			0.1
Regional use tonnage (tonnes/yea			700
Fraction of Regional tonnage use			0.14
Annual site tonnage (tonnes/year)			100
Maximum daily site tonnage (kg/d			5.0E+03
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):			20
Environmental factors not i	nflu	enced by risk management	
Local freshwater dilution factor	or:		10
Local marine water dilution factor:		100	
		ffecting Environmental Exposure	
		ss (initial release prior to RMM):	5.0E-03
Release fraction to wastewater from process (initial release prior to RMM):		3.0E-05	
	roce	ess (initial release prior to RMM):	1.0E-03
Technical conditions and m	eas	ures at process level (source) to pr	
	ss si	tes thus conservative process re-	
lease estimates used.			
Technical onsite conditions sions and releases to soil	and	d measures to reduce or limit disch	arges, air emis-
	Sur	e is driven by freshwater sediment.	
		substance to or recover from onsite	
wastewater.			
No wastewater treatment requ	uired	d.	

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	1
Treat air emission to provide a typical removal efficiency of (%)	70
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93.6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93.6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	2.1E+06
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable	local and/or regional
regulations.	_
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 -Environment

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

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

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

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

Section 4.2 - Environment

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

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

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gies, either alone or in combination.

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

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

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Exposure Scenario - Worker

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

SECTION 2	OPERATIONAL CONDITIONS AND RISK 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 stated differently).,	ted
Frequency and Duration of	f Use	
Covers daily exposures up to	o 8 hours (unless stated differently).	
Other Operational Condition	ons affecting Exposure	
	an 20°C above ambient temperature (unless stated differen dard of occupational hygiene is implemented.	tly).

Contributing Scenarios **Risk Management Measures** General exposures (closed sys-No other specific measures identified. tems)PROC1PROC2PROC3 Operation of equipment containing No other specific measures identified. engine oils and similar.PROC20 General exposures (open sys-No other specific measures identified. tems)PROC4 Bulk transfersPROC8b No other specific measures identified. Filling/ preparation of equipment No other specific measures identified. from drums or containers.Dedicated facilityPROC8b Filling/ preparation of equipment Avoid carrying out activities involving exposure for more from drums or containers. Nonthan 4 hours dedicated facilityPROC8a Operation and lubrication of high Provide extraction ventilation at points where emissions energy open equipmentInoccur. doorPROC17PROC18

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Operation and lubrication of high energy open equipmentOut-doorPROC17		Ensure operation is undertaken o Avoid carrying out activities involve than 4 hours		
Maintenance (of larger plant items) and machine set upPROC8b		No other specific measures identi	fied.	
Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature).Dedicated facilityPROC8b		Drain down system prior to equip nance.	ment opening or maint	9-
Maintenance of small itemsOp tion is carried out at elevated to perature (> 20°C above ambie temperature).Non-dedicated fa tyPROC8a	em- nt	Drain or remove substance from a in or maintenance.	equipment prior to brea	ık-
Engine lubricant servicePROC	9	No other specific measures identi	fied.	
ManualRolling, BrushingPROC	C10	No other specific measures identi	fied.	
SprayingPROC11		Provide a good standard of gener (5 to 15 air changes per hour). Avoid carrying out activities involve than 4 hours , or: Wear a respirator conforming to E better.	ring exposure for more	
Treatment by dipping and pouringPROC13		No other specific measures identi	fied.	
Storage.PROC1PROC2		Store substance within a closed s	ystem.	
Section 2.2	Conti	rol of Environmental Exposure		
Substance is complex UVCB.		•		1
Predominantly hydrophobic.				1
Readily biodegradable.				1
Amounts Used			. I	1
Fraction of EU tonnage used in region:			0.1	
Regional use tonnage (tonnes			12	1
Fraction of Regional tonnage u	ised lo	ocally:	5.0E-04	
Annual site tonnage (tonnes/year):		-	5.8E-03	
Maximum daily site tonnage (kg/day):	1.6E-02	
Frequency and Duration of U	Jse			
Continuous release.				
Emission Days (days/year):			365	
Environmental factors not influen		ced by risk management		
Local freshwater dilution factor			10	
Local marine water dilution fac			100	_
Other Operational Conditions affecting Environmental Exposure			1	
Release fraction to air from process (initial release prior to RMM):			1.0E-02	

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Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): 1.0E-02 Technical conditions and measures at process level (source) to prevent release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air estimates used. Technical onsite conditions and measures to reduce or limit discharges, air estimates used. 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.	
Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to prevent release common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air estimates used. 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.	
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 estimates 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.	
Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air estimates 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.	
lease estimates used. Technical onsite conditions and measures to reduce or limit discharges, air estimates 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.	emis-
Technical onsite conditions and measures to reduce or limit discharges, air estimates 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.	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.	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.	
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.	
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.	
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.	
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.	
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.	
Wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils.	
Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils.	
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 93.6	
(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) 2,000	
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/o	or regiona
regulations.	ŭ
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/o regulations.	

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

Section 3.2 - Environment

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

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

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Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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

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Exposure Scenario - Worker

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

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

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

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Operation and lubrication of high	Avoid carrying out operation for more than 4 hours.
energy open equipmentOut-	
doorPROC17	No other energia measures identified
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 or remove substance from equipment prior to breakin or maintenance.
Engine lubricant servicePROC9	No other specific measures identified.
ManualRolling, BrushingPROC10	No other specific measures identified.
SprayingPROC11	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A filter or better.
Treatment by dipping and pouringPROC13	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.
Section 2.2 Conf	rol of Environmental Exposure
Substance is complex UVCB.	·
Predominantly hydrophobic.	
Poadily biodogradable	

Section 2.2	Control of Environmental Exposu	ire
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0.1
Regional use tonnage (tonnes	s/year):	12
Fraction of Regional tonnage	used locally:	5.0E-04
Annual site tonnage (tonnes/year):		5.8E-03
Maximum daily site tonnage (kg/day):		1.6E-02
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influenced by risk management		
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from wide dispersive use (regional only):		1.5E-01
Release fraction to air from wide dispersive use (regional only):		5.0E-02

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Release fraction to soil from wide dispersive use (regional only):	5.0E-02
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93.6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93.6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	40
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,000
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable	e local and/or regiona
regulations.	
Conditions and measures related to external recovery of waste	
Conditions and measures related to external recovery of waste External recovery and recycling of waste should comply with applicable	local and/or regiona

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

Section 3.2 -Environment

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

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

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

Section 4.2 - Environment

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

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

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

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

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Exposure Scenario - Worker

30000000787	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Metal working fluids / rolling oils- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 17 Environmental Release Categories: ERC4, ESVOC SpERC 4.7a.v1
Scope of process	Covers the use in formulated MWFs/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	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		
Assume a second and the second the second and the s		

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 or occupational riggione is implemented.			
Contributing Scenarios Risk I		Management Measures	
General exposures (closed sy tems)PROC1PROC2PROC3		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 equipment from drums or contain- ers.PROC8bPROC5PROC9		No other specific measures identified.	
Process samplingPROC8b		No other specific measures identified.	
Metal machining operationsPROC17		No other specific measures identified.	
Treatment by dipping and pouringPROC13	ır-	No other specific measures identified.	

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

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region:		0.1
Regional use tonnage (tonnes/year):		10
Fraction of Regional tonnage used locally:		1
Annual site tonnage (tonnes/year):		10
Maximum daily site tonnage (kg/day):		500
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		20
Environmental factors not	influenced by risk management	
Local freshwater dilution fact	or:	10
Local marine water dilution factor:		100
Other Operational Conditio	ns affecting Environmental Exposure	
Release fraction to air from p	rocess (initial release prior to RMM):	2.0E-02
Release fraction to wastewat RMM):	er from process (initial release prior to	3.0E-05
Release fraction to soil from	process (initial release prior to RMM):	0
Technical conditions and n	neasures at process level (source) to p	revent release
	ss sites thus conservative process re-	
lease estimates used.	I	
	s and measures to reduce or limit discl	narges, air emis-
sions and releases to soil	access in deixon by feachwater	
	osure is driven by freshwater.	
Prevent discharge of undisso	lved substance to or recover from onsite	

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wastewater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	70
Treat onsite wastewater (prior to receiving water discharge) to provide 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 (%)	93.6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93.6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	8.3E+05
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable	local and/or regional
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 -Environment

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

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measures.

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

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

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

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Exposure Scenario - Worker

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

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration 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 Managem		nent Measures	
General exposures (closed sys-		No other specific measures identified.	
tems)PROC1PROC2PROC3			
Bulk transfersPROC8b		No other specific measures identified.	
Filling/ preparation of equipme	ent from drums	No other specific measures identified.	
or contain-			
ers.PROC5PROC8aPROC8b	PROC9		
Process samplingDedicated facilityPROC8b		No other specific measures identified.	
Metal machining operationsPROC17		Provide a good standard of general or controlle ventilation (5 to 15 air changes per hour).	∍d
ManualRolling, BrushingPROC10		No other specific measures identified.	
SprayingPROC11		Provide a good standard of general or controlle ventilation (5 to 15 air changes per hour).	∌d

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		Avoid carrying out activity more than 4 hours	ties involving exposure	for
		, or: Wear a respirator confor A/P2 filter or better.	ming to EN140 with T	ype
Treatment by dipping and pour	uringPROC13	No other specific measu	res identified.	
Equipment cleaning and maintenance- PROC8aPROC8b		Drain down system prior maintenance.	to equipment opening	g or
Storage.PROC1PROC2		Store substance within a	a closed system.	
Section 2.2	Control of Env	vironmental Exposure		
Substance is complex UVCB.		The internal Expectation		
Predominantly hydrophobic.				
Readily biodegradable.				1
Amounts Used				1
Fraction of EU tonnage used	in region:		0.1	
Regional use tonnage (tonne			5.0	
Fraction of Regional tonnage			5.0E-04	1
Annual site tonnage (tonnes/			2.5E-03	
Maximum daily site tonnage (6.8E-03	
Frequency and Duration of			0.0L-03	-
Continuous release.	USE			
			365	
Emission Days (days/year): Environmental factors not i	nfluoncod by si	ek managamant	J00	
Local freshwater dilution factor		on manayement	10	
Local marine water dilution factor:		100		
Other Operational Conditions affecting Environmental Exposure		100		
Release fraction to air from w			5.0E-02	-
Release fraction to wastewate			2.5E-02	
Release fraction to soil from v			0	-
Technical conditions and m				
Common practices vary acros			Tront release	
lease estimates used.	is sites trius corr	oorvative process re-		
Technical onsite conditions	and measures	to reduce or limit discha	arges, air emis-	
sions and releases to soil			goo, a oo	
Risk from environmental expo	sure is driven b	y freshwater.		1
No wastewater treatment requirements		•		1
Treat air emission to provide a typical removal efficiency of (%)		0		
Treat onsite wastewater (prior to receiving water discharge) to provide		0	1	
the required removal efficience		3 , 1		
If discharging to domestic sewage treatment plant, no secondary		0		
wastewater treatment require	d			
Organisational measures to	prevent/limit r	elease from site		
Do not apply industrial sludge	to natural soils.			
Sludge should be incinerated	, contained or re	claimed.		
Conditions and Measures re				
Estimated substance remova	I from wastewate	er via domestic sewage	93.6	

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treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93.6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	18
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

indicated.

Section 3.2 -Environment

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

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

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,		
Frequency and Duration of	Use		
Covers daily exposures up to	8 hours (unless stated differently).		
Other Operational 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
Material transfersUse in con-	No other specific measures identified.
tained sys-	
temsPROC1PROC2PROC3	
Drum/batch transfersPROC8b	No other specific measures identified.
Mixing operations (closed sys-	No other specific measures identified.
tems)PROC3	
Mixing operations (open sys-	No other specific measures identified.
tems)PROC4	
Mold formingPROC14	No other specific measures identified.
Casting operations(open sys-	Provide extraction ventilation at points where emissions oc-
tems)Operation is carried out a	t cur.
elevated temperature (> 20°C	
above ambient tempera-	
ture). Aerosol generation due to	
elevated process temperature-	
PROC6	
SprayingMachinePROC7	Minimise exposure by partial enclosure of the operation or

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equipment and provide extract ventilation at openings. SprayingManualPROC7 Provide a good standard of general or controlled ventilation.		
to 15 air changes per hour). Avoid carrying out activities involving exposure for more 4 hours	,	
ManualRolling, BrushingPROC10 No other specific measures identified.		
Dipping, immersion and pouringPROC13 No other specific measures identified.		
Storage.PROC1PROC2 Store substance within a closed system.		
Section 2.2 Control of Environmental Exposure		
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region: 0.1		
Regional use tonnage (tonnes/year): 70		
Fraction of Regional tonnage used locally: 1		
Annual site tonnage (tonnes/year): 70		
Maximum daily site tonnage (kg/day): 3.5E+03		
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year): 20		
Environmental factors not influenced by risk management		
Local freshwater dilution factor: 10		
Local marine water dilution factor: 100		
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from process (initial release prior to RMM): 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):		
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 emis-		
sions and releases to soil		
Risk from environmental exposure is driven by freshwater.		
Prevent discharge of undissolved substance to or recover from onsite		
wastewater.		
No wastewater treatment required.		
Treat air emission to provide a typical removal efficiency of (%)		
Treat onsite wastewater (prior to receiving water discharge) to provide 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.		

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Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage treatment (%)	93.6	
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93.6	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	6.5E+06	
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03	
Conditions and Measures related to external treatment of waste for disposal		

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

indicated.

Section 3.2 -Environment

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

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

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

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

Section 4.2 -Environment

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

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

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

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Exposure Georgia Trerker		
3000000791 SECTION 1 EXPOSURE SCENARIO TITLE		
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 Sconarios	Disk Managament Measures
	Risk Management Measures
Bulk transfersUse in contained	
systemsPROC1PROC2PROC	3
Drum/batch transfer-	No other specific measures identified.
sPROC8aPROC8b	·
Mixing operations (closed sys-	No other specific measures identified.
tems)PROC3	
Mixing operations (open sys-	No other specific measures identified.
tems)PROC4	
Mold formingPROC14	No other specific measures identified.
Casting operations(open sys-	Provide extraction ventilation at points where emissions oc-
tems)Operation is carried out a	at cur.
elevated temperature (> 20°C	
above ambient tempera-	
ture).PROC6	
SprayingMachinePROC11	Minimise exposure by partial enclosure of the operation or
	equipment and provide extract ventilation at openings.
	, or:

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	Wear a respirator conforming to EN14 better.	40 with Type A filter or	
SprayingManualPROC11	Provide a good standard of general o to 15 air changes per hour). Avoid carrying out activities involving 4 hours	,	
ManualRolling, BrushingPROC10	No other specific measures identified		
Storage.PROC1PROC2	Store substance within a closed syste	em.	
Section 2.2 Co	ontrol of Environmental Exposure		
Substance is complex UVCB.	•		
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in r	egion:	0.1	
Regional use tonnage (tonnes/ye		30	
Fraction of Regional tonnage use		5.0E-04	
Annual site tonnage (tonnes/year		1.5E-02	
Maximum daily site tonnage (kg/		4.1E-02	
Frequency and Duration of Use			
Continuous release.	-		
Emission Days (days/year):		365	
Environmental factors not influ	uenced by risk management		
Local freshwater dilution factor:		10	
Local marine water dilution factor	r:	100	
Other Operational Conditions affecting Environmental Exposure			
Release fraction to air from wide	dispersive use (regional only):	9.5E-01	
Release fraction to wastewater fr		2.5E-02	
Release fraction to soil from wide		2.5E-02	
Technical conditions and measures at process level (source) to prevent release			
	ites thus conservative process re-		
lease estimates used.			
	Technical onsite conditions and measures to reduce or limit discharges, air emis-		
sions and releases to soil	as is alabase by facebooks	_	
Risk from environmental exposu			
No wastewater treatment require			
Treat air emission to provide a ty	receiving water discharge) to provide	0	
the required removal efficiency o	f >= (%)		
If discharging to domestic sewag	e treatment plant, no secondary	0	
wastewater treatment required.	and the standard of the standa		
Organisational measures to pr			
Do not apply industrial sludge to			
Sludge should be incinerated, co	intained of reciaimed.		
Conditions and Measures relat	ed to municipal sewage treatment p	lant	
Estimated substance removal fro treatment (%)	om wastewater via domestic sewage	93.6	

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Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93.6	
Maximum allowable site tonnage (MSafe) based on release following	82	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03	
Conditions and Massures related to external treatment of wests for disposal		

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 -Environment

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

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

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

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30000000792		
SECTION 1 EXPOSURE SCENARIO TITLE		
Title	Use in Agrochemicals uses- Professional	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 4, PROC 8a, PROC 8b, PROC 11, PROC 13 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.11a.v1	
Scope of process	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT	
	MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of	Use	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Conditio	ns affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated difference a good basic standard of occupational hygiene is implemented.		
Contributing Scenarios	Risk Management Measures	
Transfer from/pouring from containersPROC8b	No other specific measures identified.	
Mixing in contain- ers.PROC4	No other specific measures identified.	
Spraying/ fogging by manual applicationPROC11	Wear a respirator conforming to EN140 with Type A/P2 filter or better.	
Spraying/ fogging by machine applicationPROC11	Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20., or:	
	Wear a respirator conforming to EN140 with Type A/P2 filter or better.	
Ad hoc manual application via trigger sprays, dipping, etc.PROC13	No other specific measures identified.	
Equipment cleaning and maintenancePROC8a	No other specific measures identified.	
Storage.PROC1PROC2	Store substance within a closed system.	

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	Control of Engineers and all Engineers	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		1
Fraction of EU tonnage used i		0.1
Regional use tonnage (tonnes		610
Fraction of Regional tonnage		2.0E-03
Annual site tonnage (tonnes/y	ear):	1.2
Maximum daily site tonnage (I	kg/day):	3.4
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 fac		100
	ns affecting Environmental Exposure	1.00
	de dispersive use (regional only):	9.0E-01
Release fraction to wastewate		1.0E-02
	vide dispersive use (regional only):	9.0E-02
	easures at process level (source) to pro-	
	s sites thus conservative process re-	- CVCIII ICICASC
lease estimates used.	s sites thus conservative process re-	
	and measures to reduce or limit discha	arge air emis-
sions and releases to soil	and measures to reduce or mine disen-	arges, air cims-
Risk from environmental expo	sure is driven by soil	
No wastewater treatment requ		
	a typical removal efficiency of (%)	0
	to receiving water discharge) to provide	0
the required removal efficienc		
	/age treatment plant, no secondary	0
wastewater treatment required		
	prevent/limit release from site	
Do not apply industrial sludge	•	
Sludge should be incinerated,		
oldage should be inclinerated,	contained of reciainied.	
Conditions and Measures re	elated to municipal sewage treatment p	lant
	from wastewater via domestic sewage	93.6
treatment (%)	Tioni wastewater via domestic sewage	93.0
	m wastewater after onsite and offsite	93.6
		93.0
(domestic treatment plant) RM	age (MSafe) based on release following	4.7E+03
		4.7 = +03
total wastewater treatment rer Assumed domestic sewage tre		2.0E+03
	elated to external treatment of waste for	
•	al of waste should comply with applicable	local and/or regional
regulations.		
Conditions and measures re	. lata d ta autamaal maaaa afa = 4 -	

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regulations.

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker	
30000000793	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, PROC 8b, PROC 16 Environmental Release Categories: ERC7, ESVOC SpERC 7.12a.v1
Scope of process	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

SECTION 2	OPERATIONAL CONDITIONS AND 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	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Conditio	ns affecting Exposure	
Assumes use at not more that	an 20°C above ambient temperature (unles	s stated differently).
Assumes a good basic stand	ard of occupational hygiene is implemented	d.
Contributing Scenarios	Risk Management Measures	
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.	
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.	
General exposures (closed systems)PROC1PROC2	No other specific measures identified.	
Use as a fuel(closed systems)PROC16PROC3	No other specific measures identified.	
Equipment cleaning and maintenancePROC8a	No other specific measures identified.	
Storage.PROC1PROC2	Store substance within a closed system.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
	Fraction of EU tonnage used in region: 0.1	
Regional use tonnage (tonnes/year): 15		

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	1
Fraction of Regional tonnage used locally:	1
Annual site tonnage (tonnes/year):	15
Maximum daily site tonnage (kg/day):	750
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	20
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	5.0E-03
Release fraction to wastewater from process (initial release prior to RMM):	1.0E-05
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	•
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	95
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93.6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93.6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1.5E+06
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03
Conditions and Measures related to external treatment of waste for	
Combustion emissions limited by required exhaust emission controls.	•
Waste combustion emissions considered in regional exposure assessm	ent.
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is g	enerated.

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

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Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

Exposure Scenario - Worker	
30000000794	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, PROC 8b, PROC 16 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.12b.v1
Scope of process	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

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

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios	Risk Management Measures
Bulk transfersDedicated facili- tyPROC8b	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.		
Readily biodegradable.		
Amounts Used		

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Fraction of EU tonnage used in region:	0.1
Regional use tonnage (tonnes/year):	15
Fraction of Regional tonnage used locally:	5.0E-04
Annual site tonnage (tonnes/year):	7.5E-03
Maximum daily site tonnage (kg/day):	2.1E-02
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):	1.0E-04
Release fraction to wastewater from wide dispersive use:	1.0E-05
Release fraction to soil from wide dispersive use (regional only):	1.0E-05
Technical conditions and measures at process level (source) to pro	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit discha- sions and releases to soil	arges, air emis-
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
One distance and Management related to many initial account to a second to	laut
Conditions and Measures related to municipal sewage treatment p	
Estimated substance removal from wastewater via domestic sewage treatment (%)	93.6
Total efficiency of removal from wastewater after onsite and offsite	93.6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	53
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03
Conditions and Measures related to external treatment of waste for	r disposal
Combustion emissions limited by required exhaust emission controls. Waste combustion emissions considered in regional exposure assessm	ent.
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is g	enerated.

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

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Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 -Environment

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

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

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

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Exposure Scenario - Worker

Exposure Scenario - Worker	
30000000796	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Functional Fluids- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, PROC 9, PROC 20 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.13b.v1
Scope of process	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in professional equipment including maintenance and related material transfers.

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

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Congrise	Dia	Jr Managamant Magaziraa	
Contributing Scenarios	KIS	k Management Measures	
Drum/batch transfersNon-		Use drum pumps.	
dedicated facilityPROC8a			
Transfer from/pouring from co	on-	No other specific measures identified.	
tainersPROC9			
Filling/ preparation of equipme	ent	No other specific measures identified.	
from drums or contain-			
ers.PROC9			
General exposures (closed		No other specific measures identified.	
systems)PROC1PROC2PROC3			
Operation of equipment conta	ain-	No other specific measures identified.	
ing engine oils and simi-			
lar.PROC20			
Operation of equipment conta	ain-	No other specific measures identified.	
ing engine oils and simi-		·	
lar. Operation is carried out at			
elevated temperature (> 20°C	;		
above ambient tempera-			
ture).PROC20			
Remanufacture of reject arti-		No other specific measures identified.	
-		•	

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clesPROC9			
Equipment maintenance- PROC8a	Drain down system prior to equipme nance.	nt opening or mainte-	
Storage.PROC1PROC2	Store substance within a closed syst	Store substance within a closed system.	
Section 2.2	ontrol of Environmental Exposure		
Substance is complex UVCB.	ontrol of Environmental Exposure		
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in r	ogion:	0.1	
Regional use tonnage (tonnes/ye		15	
Fraction of Regional tonnage use		5.0E-04	
Annual site tonnage (tonnes/yea		7.5E-03 2.1E-02	
Maximum daily site tonnage (kg/		2.1E-02	
Frequency and Duration of Us	e		
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not influ	uenced by risk management	T	
Local freshwater dilution factor:		10	
Local marine water dilution facto		100	
Other Operational Conditions	affecting Environmental Exposure		
Release fraction to air from wide dispersive use (regional only):		5.0E-02	
Release fraction to wastewater from wide dispersive use:		2.5E-02	
Release fraction to soil from wide dispersive use (regional only):		2.5E-02	
	sures at process level (source) to pr	event release	
Common practices vary across s lease estimates used.	ites thus conservative process re-		
	nd measures to reduce or limit disch	arges, air emis-	
sions and releases to soil			
Risk from environmental exposur	re is driven by freshwater.		
No wastewater treatment require			
Treat air emission to provide a ty		0	
	receiving water discharge) to provide	0	
the required removal efficiency o			
If discharging to domestic sewag		0	
wastewater treatment required.	, a		
Organisational measures to pr	event/limit release from site	<u> </u>	
3			
Do not apply industrial sludge to			
Do not apply industrial sludge to Sludge should be incinerated, co			
Sludge should be incinerated, co Conditions and Measures relate	ntained or reclaimed. ted to municipal sewage treatment p	lant	
Sludge should be incinerated, co Conditions and Measures relate	ntained or reclaimed.	lant 93.6	
Sludge should be incinerated, co Conditions and Measures relate	ntained or reclaimed. ted to municipal sewage treatment p		
Conditions and Measures related Estimated substance removal frostreatment (%) Total efficiency of removal from values of the control of the c	ted to municipal sewage treatment porm wastewater via domestic sewage wastewater after onsite and offsite		
Conditions and Measures related Estimated substance removal frostreatment (%)	ted to municipal sewage treatment porm wastewater via domestic sewage wastewater after onsite and offsite	93.6	
Conditions and Measures related Estimated substance removal frostreatment (%) Total efficiency of removal from value (domestic treatment plant) RMM: Maximum allowable site tonnage	ted to municipal sewage treatment prom wastewater via domestic sewage wastewater after onsite and offsite (%) (MSafe) based on release following	93.6	
Conditions and Measures related Estimated substance removal frostreatment (%) Total efficiency of removal from (domestic treatment plant) RMMs	ted to municipal sewage treatment prom wastewater via domestic sewage wastewater after onsite and offsite is (%) (MSafe) based on release following val (kg/d)	93.6	

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

Conditions and measures related to external recovery of waste

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

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT		
	MEASURES		
Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,		
Frequency and Duration of	Use		
Covers daily exposures up to	8 hours (unless stated differently).		
Other Operational Conditio	ns affecting Exposure		
Assumes use at not more that	n 20°C above ambient temperature (unless stated differently).		
Assumes a good basic standard of occupational hygiene is implemented.			
Contributing Scenarios	Risk Management Measures		
Bulk transfers(closed systems)PROC1PROC2	No other specific measures identified.		
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.		
Filling of arti- cles/equipment(closed sys- tems)PROC9	No other specific measures identified.		
Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a	No other specific measures identified.		
General exposures (closed systems)PROC2	No other specific measures identified.		
General exposures (open systems)PROC4	No other specific measures identified.		
Remanufacture of reject articlesPROC9	No other specific measures identified.		
Equipment maintenance- PROC8a	No other specific measures identified.		

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Storage.PROC1PROC2	Store substance within a closed system.		
Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB			
Predominantly hydrophobic.			
Readily biodegradable.			
		<u> </u>	
Amounts Used	ta acataa.	0.4	
Fraction of EU tonnage used		0.1	
Regional use tonnage (tonne		15	
Fraction of Regional tonnage	·	0.67	
Annual site tonnage (tonnes/		10	
Maximum daily site tonnage (500	
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):		20	
	nfluenced by risk management	•	
Local freshwater dilution factor		10	
Local marine water dilution fa		100	
	ns affecting Environmental Exposure		
	rocess (initial release prior to RMM):	5.0E-03	
	er from process (initial release prior to	3.0E-05	
RMM):	er from process (initial release prior to	3.0L-03	
Release fraction to soil from p	1.0E-03		
Technical conditions and m	easures at process level (source) to pr	event release	
Common practices vary acros	ss sites thus conservative process re-		
lease estimates used.	·		
Technical onsite conditions sions and releases to soil	and measures to reduce or limit disch	arges, air emis-	
Risk from environmental expo	osure is driven by freshwater.		
	lved substance to or recover from onsite		
wastewater.			
No wastewater treatment req	uired		
		0	
	Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide		
the required removal efficience		0	
	wage treatment plant, no secondary	0	
wastewater treatment require		U	
	o prevent/limit release from site	<u> </u>	
Do not apply industrial sludge			
Sludge should be incinerated			
Sludge should be incinerated	, contained of reclaimed.		
Conditions and Measures r	elated to municipal sewage treatment p	lant	
	I from wastewater via domestic sewage	93.6	
treatment (%)	•		
Total efficiency of removal fro	93.6		
(domestic treatment plant) RI			
Maximum allowable site tonn	8.3E+05		
total wastewater treatment re			
Assumed domestic sewage to	2.0E+03		
Conditions and Measures re	The state of the s		
	sal of waste should comply with applicable		
External freatment and dispo-	sai or waste should comply with applicable	issui unu/oi regional	

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regulations.

Conditions and measures related to external recovery of waste

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

SECTION 3	EXPOSURE ESTIMATION
SECTION 3	LAI OSONE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE	
	EXPOSURE SCENARIO	

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure ocenano - Worker		
30000000802		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Road and construction applications- Professional	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13 Environmental Release Categories: ERC8d, ERC8f, ESVOC SpERC 8.15.v1	
Scope of process	Application of surface coatings and binders in road and construction activities, including paving uses, manual mastic and in the application of roofing and water-proofing membranes.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT		
	MEASURES		
Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,		
Frequency and Duration of	Use		
	8 hours (unless stated differently).		
Other Operational Conditio	ns affecting Exposure		
Assumes use at not more that	n 20°C above ambient temperature (unless stated differently).		
Assumes a good basic standard of occupational hygiene is implemented.			
Contributing Scenarios	Risk Management Measures		
Drum/batch transfersNon- dedicated facilityPROC8a	No other specific measures identified.		
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.		
Drum/batch transfersDedi-	Ensure operation is undertaken outdoors.		
cated facilityOperation is carried out at elevated tem- perature (> 20°C above ambient tempera- ture).PROC8b	Avoid carrying out activities involving exposure for more than 4 hours		
ManualRolling, Brush-ingPROC10	Ensure operation is undertaken outdoors.		
Spraying/ fogging by machine applicationOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC11	Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better. Limit the substance content in the mixture to 50 %.		
Spraying/ fogging by ma-	Ensure operation is undertaken outdoors.		

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chine applicationPROC11	Wear a respirator conforming to EN140 v better.	vith Type A filter or	
Dipping, immersion and pouringPROC13	No other specific measures identified.		
Drum and small package fillingPROC9	No other specific measures identified.		
Equipment cleaning and maintenancePROC8a	Drain down system prior to equipment opening or maintenance.		
Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used	in region:	0.1	
Regional use tonnage (tonne		22	
Fraction of Regional tonnage		5.0E-04	
Annual site tonnage (tonnes/	•	1.1E-02	
Maximum daily site tonnage		3.0E-02	
Frequency and Duration of	0.0L 0Z		
Continuous release.	000		
Emission Days (days/year):	365		
	influenced by risk management	303	
Local freshwater dilution fact		10	
Local marine water dilution fa		100	
	ons affecting Environmental Exposure	100	
	vide dispersive use (regional only):	9.5E-01	
Release fraction to wastewat		1.0E-02	
	wide dispersive use (regional only):	4.0E-02	
	neasures at process level (source) to pr		
	ss sites thus conservative process re-		
lease estimates used.	oo dhoo maa concorvanyo process re		
	s and measures to reduce or limit disch	arges, air emis-	
sions and releases to soil		a. g.c., a cc	
Risk from environmental exp	osure is driven by freshwater.		
No wastewater treatment rec			
Treat air emission to provide	0		
Treat onsite wastewater (price	0		
the required removal efficien			
If discharging to domestic se	0		
wastewater treatment require			
Organisational measures to	o prevent/limit release from site		
Do not apply industrial sludge	e to natural soils.		
Sludge should be incinerated	I, contained or reclaimed.		
Conditions and Measures	related to municipal sewage treatment p	lant	
	al from wastewater via domestic sewage	93.6	
treatment (%)			
Total efficiency of removal from	om wastewater after onsite and offsite	93.6	
(domestic treatment plant) R	MMs (%)		

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Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	77
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 - Environment

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

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

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

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Exposure occinatio Worker	
30000000806	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC 10, PROC 15 Environmental Release Categories: ERC2, ERC4
Scope of process	Use of the substance within laboratory settings, including material transfers and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AI MEASURES	ND RISK MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 k	Pa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product differently).,	up to 100% (unless stated
Frequency and Duration of	Use	
	8 hours (unless stated differently).	
Other Operational Condition		
	an 20°C above ambient temperature ard of occupational hygiene is imple	
Contributing Scenarios	Risk Management Measures	
Laboratory activitiesPROC15	No other specific measures identif	ied.
CleaningPROC10	No other specific measures identif	ied.
Section 2.2	Control of Environmental Expos	sure
Substance is complex UVCB	•	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0.1
Regional use tonnage (tonne	s/year):	2.5
Fraction of Regional tonnage used locally:		0.8
Annual site tonnage (tonnes/year):		2.0
Maximum daily site tonnage (kg/day):		100
Frequency and Duration of		<u> </u>
Continuous release.		
Emission Days (days/year):		20
	influenced by risk management	<u> </u>
Local freshwater dilution fact		10
Local marine water dilution factor:		100
041 0 41 10 1141	ns affecting Environmental Expo	

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	10.55.00
Release fraction to air from process (initial release prior to RMM):	2.5E-02
Release fraction to wastewater from process (initial release prior to RMM):	2.0E-02
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 disch- sions 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 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 (%)	93.6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93.6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	3.1E+03
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable regulations.	local and/or 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.

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30000000810	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 10, PROC 15 Environmental Release Categories: ERC8a, ESVOC SpERC 8.17.v1
Scope of process	Use of small quantities within laboratory settings, including material transfers and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AND RIS	SK MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics	•	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at \$	STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of	27 '	
	8 hours (unless stated differently).	
Other Operational Condition	ons affecting Exposure	
Assumes use at not more that	an 20°C above ambient temperature (unles	ss stated differently).
Assumes a good basic stand	lard of occupational hygiene is implemente	ed.
Contributing Scenarios	Risk Management Measures	
Laboratory activitiesPROC15	No other specific measures identified.	
CleaningPROC10	No other specific measures identified.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCE	· · · · · · · · · · · · · · · · · · ·	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0.1
Regional use tonnage (tonne	es/year):	2.0
Fraction of Regional tonnage used locally:		5.0E-04
Annual site tonnage (tonnes/year):		1.0E-03
Maximum daily site tonnage (kg/day):		2.7E-03
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year): 365		365
	influenced by risk management	
Local freshwater dilution fact		10
Local marine water dilution factor: 100		100

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Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):	5.0E-01
Release fraction to wastewater from wide dispersive use:	5.0E-01
Release fraction to wastewater from wide dispersive use. Release fraction to soil from wide dispersive use (regional only):	0
Technical conditions and measures at process level (source) to pro	•
. , , ,	event release
Common practices vary across sites thus conservative process re- lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges air emis-
sions and releases to soil	arges, an erms
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93.6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93.6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	6.8
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 regiona
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regiona
regulations.	12 22.2 S. 1. S. 1
g	

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

indicated.

Section 3.2 - Environment

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

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

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

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

Section 4.2 - Environment

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

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

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

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

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES			
Section 2.1	Control of Worker Exposure			
Product Characteristics				
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP			
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,			
Frequency and Duration of Use				
Covers daily exposures up to 8 hours (unless stated differently).				
Other Operational Condition				
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.				
Contributing Scenarios	Risk Management Measures			
Bulk transfersUse in contained systemsPROC2	No other specific measures identified.			
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.			
General exposures (closed systems)Use in contained batch processesPROC3	No other specific measures identified.			
General exposures (open systems)PROC4	No other specific measures identified.			
Pouring from small containersPROC13	No other specific measures identified.			
Equipment maintenance- PROC8a	Drain down and flush system prior to equipment opening or maintenance.			
Storage.PROC1	Store substance within a closed system.			
Section 2.2	Control of Environmental Exposure			
Substance is complex UVCB.				
Predominantly hydrophobic.				
Readily biodegradable.				

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Amounts Used	
Fraction of EU tonnage used in region:	0.1
Regional use tonnage (tonnes/year):	55
Fraction of Regional tonnage used locally:	0.54
	30
Annual site tonnage (tonnes/year):	100
Maximum daily site tonnage (kg/day):	100
Frequency and Duration of Use	1
Continuous release.	200
Emission Days (days/year):	300
Environmental factors not influenced by risk management	10
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	T = -=
Release fraction to air from process (initial release prior to RMM):	5.0E-02
Release fraction to wastewater from process (initial release prior to RMM):	9.5E-01
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 discharge	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by freshwater sediment.	
Onsite waste water treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	95.8
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	34.9
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93.6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	95.8
Maximum allowable site tonnage (MSafe) based on release following	100
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03
Conditions and Measures related to external treatment of waste for	
External treatment and disposal of waste should comply with applicable regulations.	local and/or regiona
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

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Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

30000000820	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Water treatment chemicals- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 13 Environmental Release Categories: ERC8f, ESVOC SpERC 8.22b.v1
Scope of process	Covers the use of the substance for the treatment of water in open and closed systems.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics	•	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at S	TP
Concentration of the Sub-	Covers use of substance/product up to 100% (unless stated	
stance in Mixture/Article	differently).,	
Frequency and Duration of	Use	
	8 hours (unless stated differently).	
Other Operational Conditio		
	an 20°C above ambient temperature (unlessard of occupational hygiene is implemented	
Contributing Scenarios	Risk Management Measures	
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.	
General exposures (closed systems)PROC3	No other specific measures identified.	
General exposures (open systems)PROC4	No other specific measures identified.	
Pouring from small containersPROC13	No other specific measures identified.	
Equipment maintenance- PROC8a	No other specific measures identified.	
Storage.PROC1PROC2	Store substance within a closed system.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0.1
Regional use tonnage (tonne		25
Fraction of Regional tonnage used locally: 6.0E-02		6.0E-02

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Annual site to a series (to see a least)	145
Annual site tonnage (tonnes/year):	1.5
Maximum daily site tonnage (kg/day):	4.0
Frequency and Duration of Use	T
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	<u></u>
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):	1.0E-02
Release fraction to wastewater from wide dispersive use:	9.9E-01
Release fraction to soil from wide dispersive use (regional only):	0
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by soil.	
If discharging to domestic sewage treatment plant, no secondary	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0.7
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93.6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93.6
(domestic treatment plant) RMMs (%)	1.2
Maximum allowable site tonnage (MSafe) based on release following	48
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03
Conditions and Measures related to external treatment of waste fo	
External treatment and disposal of waste should comply with applicable	e local and/or regional
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	G

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

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Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Consumer

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

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	•
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa	at STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 1	00 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		2,200
covers skin contact area (cm2):		468
Frequency and Duration o	f Use	
Unless stated otherwise.		
Covers use up to (days/year):		4
covers use up to (times/day of use):		1
Exposure (hours/event): 0.17		0.17
Other Operational Condition	ons affecting Exposure	

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Heat transfer fluids Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year
	covers skin contact area up to (cm2): 468.00 cm2
	For each use event, covers amount up to 2,200 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0.17 hours/event
Hydraulic fluids Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year

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covers skin contact area up to (cm2): 468.00 cm2
For each use event, covers amount up to 2,200 g
Covers use in a one car garage (34 m3) under typical ventila-
tion.
Covers use in room size of 34 m3
Covers exposure up to 0.17 hours/event

Section 2.2 Control of Environmental Exposure		
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0.1
Regional use tonnage (tonne	s/year):	15
Fraction of Regional tonnage	used locally:	5.0E-04
Annual site tonnage (tonnes/	/ear):	7.5E-03
Maximum daily site tonnage (kg/day):	2.1E-02
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 factor: 100		100
	ns affecting Environmental Exposure	
	ide dispersive use (regional only):	5.0E-02
Release fraction to wastewate		2.5E-02
Release fraction to soil from wide dispersive use (regional only): 2.5E-02		
	elated to municipal sewage treatment p	olant
	I from wastewater via domestic sewage	93.6
treatment (%)		
	age (MSafe) based on release following	52
total wastewater treatment re		
Assumed domestic sewage treatment plant flow (m3/d) 2.0E+03		
Conditions and Measures re	elated to external treatment of waste fo	or disposal

External treatment and disposal of waste should comply with applicable local and/or region-

al regulations.

Conditions and measures related to external recovery of waste

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

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

Section 3.2 -Environment

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

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the Petrorisk model.

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Consumer

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

SECTION 2	OPERATIONAL CONDITIONS A MEASURES	ND 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 (%): 1	00 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers a	amount up to (g):	37,500
covers skin contact area (cm2):		420
Frequency and Duration of Use		
Unless stated otherwise.		
covers use up to (times/day of use):		1
Exposure (hours/event): 2		2
Other Operational Conditions affecting Exposure		

Other Operational Conditions affecting Exposure

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Fuels Liquid: Automotive Refuelling.	Covers concentrations up to 100 %	
	covers use up to 52 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 210.00 cm2	
	For each use event, covers amount up to 37,500 g	
	Covers outdoor use.	
	Covers use in room size of 100 m3	
	Covers exposure up to 0.05 hours/event	
Fuels Liquid Scooter Refuelling.	Covers concentrations up to 100 %	
	covers use up to 52 day/year	

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	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 210.00 cm2	
	For each use event, covers amount up to 3,750 g	
	Covers outdoor use.	
	Covers use in room size of 100 m3	
	Covers exposure up to 0.03 hours/event	
Fuels Liquid, Garden	Covers concentrations up to 100 %	
Equipment - Use.	Covers contectitiations up to 100 /0	
	covers use up to 26 day/year	
	covers use up to 1 times/day of use	
	For each use event, covers amount up to 750 g	
	Covers outdoor use.	
	Covers use in room size of 100 m3	
	Covers exposure up to 2.00 hours/event	
Fuels Liquid: Garden	Covers concentrations up to 100 %	
Equipment - Refuelling.	Covers contectitiations up to 100 /0	
Equipment Relating.	covers use up to 26 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 420.00 cm2	
	For each use event, covers amount up to 750 g	
	Covers use in a one car garage (34 m3) under typical ventila-	
	tion.	
	Covers use in room size of 34 m3	
	Covers exposure up to 0.03 hours/event	
Fuels Liquid: Home space	Covers concentrations up to 100 %	
heater fuel.		
	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 210.00 cm2	
	For each use event, covers amount up to 3,000 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20m3	
	Covers exposure up to 0.03 hours/event	
Fuels Liquid: Lamp oil.	Covers concentrations up to 100 %	
	covers use up to 52 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 210.00 cm2	
	For each use event, covers amount up to 100 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20m3	
	Covers exposure up to 0.01 hours/event	
	Legal exposure up to 0.01 hours/event	

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in	region:	0.1
Regional use tonnage (tonnes/	year):	210
Fraction of Regional tonnage u	sed locally:	5.0E-04

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Annual site tonnage (tonnes/year):	0.11
Maximum daily site tonnage (kg/day):	0.29
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):	1.0E-04
Release fraction to wastewater from wide dispersive use:	1.0E-05
Release fraction to soil from wide dispersive use (regional only):	1.0E-05
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93.6
treatment (%)	
Maximum allowable site tonnage (MSafe) based on release following	750
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03
Conditions and Measures related to external treatment of waste fo	r disposal
Combustion emissions limited by required exhaust emission controls.	
Waste combustion emissions considered in regional exposure assessment	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
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	
Massures/Operational Conditions outlined in Section 2 are implemented	

Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users

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

Section 4.2 - Environment

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

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

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gies, either alone or in combination.

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

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Exposure Scenario - Consumer

30000001120	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Agrochemicals uses - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: , PC27 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.11b.v1
Scope of process	Covers the consumer use in agrochemicals in liquid and solid forms.

SECTION 2	OPERATIONAL CONDITIONS A MEASURES	ND 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 (%): 5	0 %
Amounts Used		
Unless stated otherwise.		
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): Exposure (hours/event): 4		1
		4
Other Operational Conditions affecting Exposure		

Other Operational Conditions affecting Exposure

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Fertilizers Lawn and garden preparations.	Covers concentrations up to 15 %	
	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 857.50 cm2	
	For each use event, assumes swallowed amount of 0.3 g	
	Covers exposure up to 4 hours/event	
Plant protection products	Covers concentrations up to 15 %	
	covers use up to 365 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 857.50 cm2	

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For each use event, assumes swallowed amount of 0.3 g

Section 2.2	Control of Environmental Exposure	
Substance is complex U	JVCB.	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage	used in region:	0.1
Regional use tonnage (t		20
Fraction of Regional ton	nage used locally:	2.0E-03
Annual site tonnage (tor	nnes/year):	4.0E-02
Maximum daily site tonr		0.11
Frequency and Duration	on of Use	
Continuous release.		
Emission Days (days/ye		365
	not influenced by risk management	
Local freshwater dilution	n factor:	10
Local marine water dilut		100
Other Operational Conditions affecting Environmental Exposure		_
	rom wide dispersive use (regional only):	9.0E-01
	tewater from wide dispersive use:	1.0E-02
Release fraction to soil	from wide dispersive use (regional only):	9.0E-02
Conditions and Measures related to municipal sewage treatment plant		olant
	moval from wastewater via domestic sewage	93.6
treatment (%)		
	tonnage (MSafe) based on release following	227
total wastewater treatme		
	age treatment plant flow (m3/d)	2.0E+03
Conditions and Measures related to external treatment of waste for disposal		
	disposal of waste should comply with applicable	e local and/or region-
al regulations		

al regulations.

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 consumer exposures unless otherwise indicated.	

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

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Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Consumer

22222224442	
30000001119	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Lubricants - Consumer High Environmental Release
Use Descriptor	Sector of Use: SU21
	Product Categories: PC1, PC24, PC31
	Environmental Release Categories: ERC8a, ERC8d,
	ESVOC SpERC 8.6c.v1
	20 V 0 0 0 P 2 1 C 0 . 0 0 . V 1
Scope of process	Covers the consumer use of formulated lubricants in closed
ocope of process	and open systems including transfer operations, application,
	operation of engines and similar articles, equipment mainte-
	nance and disposal of waste oil.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa	at STP
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 o	f Use	
Unless stated otherwise.		
covers use up to (times/day of use):		1
Exposure (hours/event):		6
Other Operational Conditi	ons affecting Exposure	

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Adhesives, sealants Glues, hobby use.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35.73 cm2
	For each use event, covers amount up to 9 g
	Covers use in room size of 20m3
	Covers use under typical household ventilation.
	Covers exposure up to 4 hours/event

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Adhesives, sealants Glues	Covers concentrations up to 30 %
DIY-use (carpet glue, tile	·
glue, wood parquet glue).	
	covers use up to 1 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110.00 cm2
	For each use event, covers amount up to 6,390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 6.00 hours/event
Adhesives, sealants Glue from spray.	Covers concentrations up to 30 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35.73 cm2
	For each use event, covers amount up to 85.05 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4.00 hours/event
Adhesives, sealants Sealants.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35.73 cm2
	For each use event, covers amount up to 75 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1.00 hours/event
Lubricants, greases, release products Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468.00 cm2
	For each use event, covers amount up to 2,200 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0.17 hours/event
Lubricants, greases, release products Pastes.	Covers concentrations up to 20 %
	covers use up to 10 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468.00 cm2
	For each use event, covers amount up to 34 g
	Covers exposure up to 4.00 hours/event
Lubricants, greases, release products Sprays.	Covers concentrations up to 50 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428.75 cm2
	For each use event, covers amount up to 73 g

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	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0.17 hours/event
Polishes and wax blends Polishes, wax / cream (floor, furniture, shoes).	Covers concentrations up to 50 %
	covers use up to 29 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430.00 cm2
	For each use event, covers amount up to 142 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1.23 hours/event
Polishes and wax blends Polishes, spray (furniture, shoes).	Covers concentrations up to 50 %
	covers use up to 8 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430.00 cm2
	For each use event, covers amount up to 35 g
_	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
_	Covers exposure up to 0.33 hours/event

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0.1
Regional use tonnage (tonne	s/year):	12
Fraction of Regional tonnage	used locally:	5.0E-04
Annual site tonnage (tonnes/		5.8E-03
Maximum daily site tonnage (kg/day):	1.6E-02
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influenced by risk management		
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions affecting Environmental Exposure		
	ride dispersive use (regional only):	1.5E-01
Release fraction to wastewater from wide dispersive use:		5.0E-02
Release fraction to soil from wide dispersive use (regional only):		5.0E-02
Conditions and Measures related to municipal sewage treatment plant		
Estimated substance remova treatment (%)	I from wastewater via domestic sewage	93.6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)		40
Assumed domestic sewage treatment plant flow (m3/d)		2.0E+03

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Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Consumer

30000001118	
30000001116	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Lubricants - Consumer Low Environmental Release
Use Descriptor	Sector of Use: SU21
	Product Categories: PC1, PC24, PC31
	Environmental Release Categories: ERC9a, ERC9b,
	ESVOC SpERC 9.6d.v1
Scope of process	Covers the consumer use of formulated lubricants in closed
a sope of process	and open systems including transfer operations, application,
	operation of engines and similar articles, equipment mainte-
	nance and disposal of waste oil.
	Trained and disposar or waste oil.
1	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa a	at STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 10	00 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		6,390
covers skin contact area (cm2):		468
Frequency and Duration of	f Use	
Unless stated otherwise.		
covers use up to (times/day of use):		1
Exposure (hours/event):		6
Other Operational Conditi	ons affecting Exposure	<u> </u>

Other Operational Conditions affecting Exposure

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Adhesives, sealants Glues, hobby use.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35.73 cm2
	For each use event, covers amount up to 9 g
	Covers use in room size of 20m3
	Covers use under typical household ventilation.
	Covers exposure up to 4 hours/event

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Adhesives, sealants Glues DIY-use (carpet glue, tile	Covers concentrations up to 30 %
glue, wood parquet glue).	
	covers use up to 1 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110.00 cm2
	For each use event, covers amount up to 6,390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 6.00 hours/event
Adhesives, sealants Glue from spray.	Covers concentrations up to 30 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35.73 cm2
	For each use event, covers amount up to 85.05 g
_	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4.00 hours/event
Adhesives, sealants Sealants.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35.73 cm2
	For each use event, covers amount up to 75 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1.00 hours/event
Lubricants, greases, re- lease products Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468.00 cm2
	For each use event, covers amount up to 2,200 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0.17 hours/event
Lubricants, greases, release products Pastes.	Covers concentrations up to 20 %
	covers use up to 10 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468.00 cm2
	For each use event, covers amount up to 34 g
	Covers exposure up to 4.00 hours/event
Lubricants, greases, release products Sprays.	Covers concentrations up to 50 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428.75 cm2
	For each use event, covers amount up to 73 g

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	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0.17 hours/event
Polishes and wax blends Polishes, wax / cream (floor, furniture, shoes).	Covers concentrations up to 50 %
	covers use up to 29 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430.00 cm2
	For each use event, covers amount up to 142 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1.23 hours/event
Polishes and wax blends Polishes, spray (furniture, shoes).	Covers concentrations up to 50 %
	covers use up to 8 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430.00 cm2
	For each use event, covers amount up to 35 g
_	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
_	Covers exposure up to 0.33 hours/event

Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Readily biodegradable.	Readily biodegradable.		
Amounts Used			
Fraction of EU tonnage used	I in region:	0.1	
Regional use tonnage (tonne	es/year):	12	
Fraction of Regional tonnage	e used locally:	5.0E-04	
Annual site tonnage (tonnes		5.8E-03	
Maximum daily site tonnage	(kg/day):	1.6E-02	
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not	influenced by risk management		
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	
Other Operational Conditions affecting Environmental Exposure			
Release fraction to air from v	vide dispersive use (regional only):	1.0E-02	
Release fraction to wastewa	ter from wide dispersive use:	1.0E-02	
Release fraction to soil from wide dispersive use (regional only):		1.0E-02	
Conditions and Measures related to municipal sewage treatment plant			
Estimated substance removal from wastewater via domestic sewage		93.6	
treatment (%)			
Maximum allowable site tonnage (MSafe) based on release following		41	
total wastewater treatment removal (kg/d)		0.05.00	
Assumed domestic sewage treatment plant flow (m3/d)		2.0E+03	

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Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Consumer

30000001117	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC3, PC4, PC8 (excipient only), PC9a, PC24, PC35, PC38 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4c.v1
Scope of process	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Expo	sure
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):		857.50
Frequency and Duration o	f Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		4
Exposure (hours/event):		8
Other Operational Condition	ons affecting Exposure	
Unless stated otherwise.		
Covers use at ambient temp		
Covers use in room size of 2		
Covers use under typical ho	usehold ventilation.	

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

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	Covers use in room size of 20m3	
	Covers exposure up to 0.25 hours/event	
Air care products Air care,	Covers concentrations up to 50 %	
instant action (aerosol	Covers concentrations up to 30 %	
sprays). pesticides (excipi-		
ent only).		
one only).	covers use up to 365 day/year	
	covers use up to 4 times/day of use	
	For each use event, covers amount up to 0.5 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 0.25 hours/event	
Air care products Air care,	Covers concentrations up to 10 %	
continuous action (solid and liquid).	Covers concentrations up to 10 70	
	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 35.70 cm2	
	For each use event, covers amount up to 0.48 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 8.00 hours/event	
Air care products Air care,	Covers concentrations up to 50 %	
continuous action (solid and liquid). pesticides (excipient only).	·	
Offiy).	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	covers due up to 1 times/day of due covers skin contact area up to (cm2): 35.70 cm2	
	For each use event, covers amount up to 0.48 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 8.00 hours/event	
Anti-Freeze and de-icing	Covers concentrations up to 1 %	
products Washing car window.	Covers concentrations up to 1 76	
	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 radia-	Covers concentrations up to 10 %	
tor.		
	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 428.00 cm2	
	For each use event, covers amount up to 2,000 g	
	Covers use in a one car garage (34 m3) under typical ventila-	

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	tion.
	Covers use in room size of 34 m3
Anti France and de inion	Covers exposure up to 0.17 hours/event
Anti-Freeze and de-icing products Lock de-icer.	Covers concentrations up to 50 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 214.40 cm2
	For each use event, covers amount up to 4 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	Covers exposure up to 0.25 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Laundry	Covers concentrations up to 5 %
and dish washing products.	
<u> </u>	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857.50 cm2
	For each use event, covers amount up to 15 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0.50 hours/event
infectants, pest control) (excipient only). Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	
0.00.10.0).	covers use up to 128 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857.50 cm2
	For each use event, covers amount up to 27 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0.33 hours/event
Biocidal products (e.g. Dis- infectants, pest control)	Covers concentrations up to 15 %
(excipient only). 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, covers amount up to 35 g
	Covers use under typical household ventilation.

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	Covers exposure up to 0.17 hours/event	
Coatings and paints, thin-	Covers concentrations up to 1.5 %	
ners, paint removers Wa-	Covere concentrations up to 1.5 70	
terborne latex wall paint.		
•	covers use up to 4 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 428.75 cm2	
	For each use event, covers amount up to 2,760 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 2.2 hours/event	
Coatings and paints, thin-	Covers concentrations up to 27.5 %	
ners, paint removers Solvent rich, high solid, water borne paint.		
вотпе рапп.	covers use up to 6 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 428.75 cm2	
	For each use event, covers amount up to 744 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 2.2 hours/event	
Coatings and paints, thin-	Covers concentrations up to 50 %	
ners, paint removers Aerosol spray can.		
, ,	covers use up to 2 day/year	
	Covers use up to 1 times/day of use	
	For each use event, covers amount up to 215 g	
	Covers use in a one car garage (34 m3) under typical ventila-	
	tion.	
	Covers use in room size of 24 m3	
	Covers exposure up to 0.33 hours/event	
Coatings and paints, thin- ners, paint removers Re- movers (paint-, glue-, wall	Covers concentrations up to 50 %	
paper-, sealant-remover).		
/-	covers use up to 3 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 857.50 cm2	
	For each use event, covers amount up to 491 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 2.00 hours/event	
Lubricants, greases, re-	Covers concentrations up to 100 %	
lease products Liquids.	'	
	covers use up to 4 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 468.00 cm2	
	For each use event, covers amount up to 2,200 g	
	Covers use in a one car garage (34 m3) under typical ventila-	
	tion.	

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	Covers use in room size of 34 m3	
	Covers exposure up to 0.17 hours/event	
Lubricants, greases, release products Pastes.	Covers concentrations up to 20 %	
	covers use up to 10 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 468.00 cm2	
	For each use event, covers amount up to 34 g	
	Covers exposure up to 4 hours/event	
Lubricants, greases, release products Sprays.	Covers concentrations up to 50 %	
	covers use up to 6 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 428.75 cm2	
	For each use event, covers amount up to 73 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 0.17 hours/event	
Washing and cleaning products (including solvent based products) Laundry	Covers concentrations up to 5 %	
and dish washing products.	acuera una un ta 205 deviluer	
	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 857.50 cm2	
	For each use event, covers amount up to 15 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 0.50 hours/event	
Washing and cleaning products (including solvent based products) Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	Covers concentrations up to 5 %	
	covers use up to 1 times/day of use	
	covers use up to 128 day/year	
	covers skin contact area up to (cm2): 857.50 cm2	
	For each use event, covers amount up to 27 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	Covers exposure up to 0.33 hours/event	
Washing and cleaning products (including solvent based products) Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners).	Covers concentrations up to 15 %	
	covers use up to 128 day/year	

regulations.

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covers use up to 1 times/day of use
covers skin contact area up to (cm2): 428.00 cm2
For each use event, covers amount up to 35 g
Covers use under typical household ventilation.
Covers use in room size of 20m3
Covers exposure up to 0.17 hours/event
Covers concentrations up to 20 %
covers use up to 365 day/year
covers use up to 1 times/day of use
For each use event, covers amount up to 12 g
Covers use under typical household ventilation.
Covers use in room size of 20m3
Covers exposure up to 1.00 hours/event

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0.1
Regional use tonnage (tonnes	s/year):	5.1
Fraction of Regional tonnage	used locally:	5.0E-04
Annual site tonnage (tonnes/)	/ear):	2.6E-03
Maximum daily site tonnage (kg/day):	7.0E-03
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
	nfluenced by risk management	
Local freshwater dilution factor	or:	10
Local marine water dilution factor:		100
Other Operational Condition	ns affecting Environmental Exposure	
Release fraction to air from w	ide dispersive use (regional only):	9.5E-01
Release fraction to wastewate	er from wide dispersive use:	2.5E-02
Release fraction to soil from wide dispersive use (regional only):		2.5E-02
Conditions and Measures re	elated to municipal sewage treatment	olant
Estimated substance remova treatment (%)	from wastewater via domestic sewage	93.6
Maximum allowable site tonna total wastewater treatment re	age (MSafe) based on release following moval (kg/d)	18
Assumed domestic sewage treatment plant flow (m3/d)		2.0E+03
Conditions and Measures related to external treatment of waste for disposal		
External treatment and disposal of waste should comply with applicable local and/or region-		
al regulations.		-
	elated to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional		

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SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Consumer

30000001109	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC1, PC4, PC8 (excipient only), PC9a, PC9b, PC9c, PC15, PC18, PC23, PC24, PC31, PC34 Environmental Release Categories: ERC8a, ERC8b, ESVOC SpERC 8.3c.v1
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100 %	
Amounts Used		
Unless stated otherwise.		
for each use event, covers a	mount up to (g):	13,800
covers skin contact area (cm2):		857.50
Frequency and Duration of	Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		1
Exposure (hours/event): 6		6
Other Operational Condition	ns affecting Exposure	
Unless stated otherwise.		
A	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 20m3

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	Covers use under typical household ventilation.
	Covers exposure up to 4 hours/event
Adhesives, sealants Glues	Covers concentrations up to 30 %
DIY-use (carpet glue, tile	Covers concentrations up to 30 %
glue, wood parquet glue).	
gide, weed parquet gide).	covers use up to 1 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110.00 cm2
	For each use event, covers amount up to 6,390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
Adhasiyas asalanta Clus	Covers exposure up to 6.00 hours/event
Adhesives, sealants Glue from spray.	Covers concentrations up to 30 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35.73 cm2
	For each use event, covers amount up to 85.05 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 4.00 hours/event
Adhesives, sealants Sealants.	Covers concentrations up to 30 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35.73 cm2
	For each use event, covers amount up to 75 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Avoid using when windows closed.
	Covers exposure up to 1.00 hours/event
Anti-Freeze and de-icing	Covers concentrations up to 1 %
products Washing car window.	Covers concentrations up to 1 70
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	For each use event, covers amount up to 0.5 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0.02 hours/event
Anti-Freeze and de-icing	Covers concentrations up to 10 %
products Pouring into radiator.	Covers concentrations up to 10 /6
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428.00 cm2
	For each use event, covers amount up to 2,000 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3

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	Covers exposure up to 0.17 hours/event
Anti-Freeze and de-icing	Covers concentrations up to 30 %
products Lock de-icer.	'
•	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 214.40 cm2
	For each use event, covers amount up to 4 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0.25 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Laundry and dish washing products.	Covers concentrations up to 5 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857.50 cm2
	For each use event, covers amount up to 15 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
Biocidal products (e.g. Dis-	Covers exposure up to 0.50 hours/event Covers concentrations up to 5 %
infectants, pest control) (excipient only). Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	
	covers use up to 128 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857.50 cm2
	For each use event, covers amount up to 27 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0.33 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, trigger sprays (all purpose cleaners, sanitary products,	Covers concentrations up to 15 %
glass cleaners).	
glass cleaners).	covers use up to 128 day/year
glass cleaners).	covers use up to 128 day/year covers use up to 1 times/day of use
glass cleaners).	
glass cleaners).	covers use up to 1 times/day of use
glass cleaners).	covers use up to 1 times/day of use covers skin contact area up to (cm2): 428.00 cm2 For each use event, covers amount up to 35 g
glass cleaners).	covers use up to 1 times/day of use covers skin contact area up to (cm2): 428.00 cm2
glass cleaners).	covers use up to 1 times/day of use covers skin contact area up to (cm2): 428.00 cm2 For each use event, covers amount up to 35 g Covers use under typical household ventilation.

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nore point removers Me	1
ners, paint removers Waterborne latex wall paint.	
terborne latex wall paint.	covers use up to 4 day/year
	covers use up to 4 day/year covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428.75 cm2
	For each use event, covers amount up to 2,760 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2.20 hours/event
Coatings and paints, thin-	Covers concentrations up to 27.5 %
ners, paint removers Solvent rich, high solid, water borne paint.	Covers concentrations up to 27.5 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428.75 cm2
	For each use event, covers amount up to 744 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2.20 hours/event
Coatings and paints, thin- ners, paint removers Aero- sol spray can.	Covers concentrations up to 50 %
oor opray 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 %
	covers use up to 4 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428.75 cm2
	For each use event, covers amount up to 2,760 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 2.20 hours/event
Non-metal-surface treat- ment products Solvent rich, high solid, water borne paint.	Covers concentrations up to 27.5 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428.75 cm2
	For each use event, covers amount up to 744 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2.20 hours/event
Non-metal-surface treat- ment products Aerosol spray can.	Covers concentrations up to 50 %
1 7	covers use up to 2 day/year
	covers use up to 1 times/day of use
	For each use event, covers amount up to 215 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0.33 hours/event
Non-metal-surface treat-	Covers concentrations up to 50 %

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mont products Domesians	T
ment products Removers	
(paint-, glue-, wall paper-,	
sealant-remover).	
	covers use up to 3 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857.50 cm2
	For each use event, covers amount up to 491 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 2.00 hours/event
Ink and toners	Covers concentrations up to 10 %
	covers use up to 365 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 71.40 cm2
	For each use event, covers amount up to 40 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 2.20 hours/event
Leather tanning, dye, finish-	Covers concentrations up to 50 %
ing, impregnation and care	·
products Polishes, wax /	
cream (floor, furniture,	
shoes).	
•	covers use up to 29 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430.00 cm2
	For each use event, covers amount up to 56 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 1.23 hours/event
Leather tanning, dye, finish-	Covers concentrations up to 50 %
ing, impregnation and care	Covere concentrations up to 60 %
products Polishes, spray	
(furniture, shoes).	
(rannare, enece).	covers use up to 8 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430.00 cm2
	For each use event, covers amount up to 56 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 0.33 hours/event
Lubricante gracesa re	
Lubricants, greases, release products Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468.00 cm2
	For each use event, covers amount up to 2,200 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	Covers exposure up to 0.17 hours/event

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Lubricanto graccos ro	Covers concentrations up to 20.9/
Lubricants, greases, re-	Covers concentrations up to 20 %
lease products Pastes.	covers use up to 10 day/year
	covers use up to 10 day/year covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468.00 cm2
	For each use event, covers amount up to 34 g
1. 1. 2	Covers exposure up to 4 hours/event
Lubricants, greases, release products Sprays.	Covers concentrations up to 50 %
	covers use up to 6 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428.75 cm2
	For each use event, covers amount up to 73 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0.17 hours/event
Polishes and wax blends	Covers concentrations up to 50 %
Polishes, wax / cream (floor, furniture, shoes).	
,	covers use up to 29 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430.00 cm2
	For each use event, covers amount up to 142 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1.23 hours/event
Polishes and wax blends	Covers concentrations up to 50 %
Polishes, spray (furniture, shoes).	Covers consentiations up to 60 %
·	covers use up to 8 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430.00 cm2
	For each use event, covers amount up to 35 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 0.33 hours/event
Textile dyes, finishing and	Covers concentrations up to 10 %
impregnating products; including bleaches and other processing aids	
other processing aids	covers use up to 365 day/year
	covers use up to 11 times/day of use
	covers skin contact area up to (cm2): 857.50 cm2
	For each use event, covers amount up to 115 g
	Covers use under typical household ventilation.
	Covers use in room size of 20m3
	Covers exposure up to 1.00 hours/event

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

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Pandily hindogradable	T
Readily biodegradable. Amounts Used	
Fraction of EU tonnage used in region:	0.1
Regional use tonnage (tonnes/year):	270
Fraction of Regional tonnage used locally:	5.0E-04
Annual site tonnage (tonnes/year):	0.13
Maximum daily site tonnage (kg/day):	0.37
Frequency and Duration of Use	0.0.
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	-
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):	9.85E-01
Release fraction to wastewater from wide dispersive use:	1.0E-02
Release fraction to soil from wide dispersive use (regional only):	5.0E-03
Conditions and Measures related to municipal sewage treatment p	olant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93.6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	840
Assumed domestic sewage treatment plant flow (m3/d)	2.0E+03
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable	e local and/or region-
al regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	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		

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	

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.