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

1.1 Product identifier

Trade name : ShellSol A100 High Cumene

Product code : Q7291, Q7391

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., Re-

stricted to professional users.

This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the sup-

plier.

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.

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

ways.

Carcinogenicity, Category 1B H350: May cause cancer.

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, Cat-

egory 2

H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :









Signal word : Danger

Hazard statements : PHYSICAL HAZARDS:

H226 Flammable liquid and vapour.

HEALTH HAZARDS:

H304 May be fatal if swallowed and enters airways.

H350 May cause cancer.

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 cracking.

Repeated exposure may cause skin dryness or

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.

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

attention.

Storage:

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No precautionary phrases.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

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

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

May form flammable/explosive vapour-air mixture.

This material is a static accumulator.

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

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

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

Auditory system

SECTION 3: Composition/information on ingredients

3.1 Substances

Components

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

Further information

Contains:

Chemical name	Identification number	Classification	Concentration (% w/w)
Cumene	98-82-8, 202-704-5	Flam. Liq.3; H226 Asp. Tox.1; H304 STOT SE3; H335 Carc.1B; H350 Aquatic Chronic2; H411	>= 0 - <= 2
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	>= 0 - < 0,1

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	Carc.1A; H350 STOT RE1; H372 Aquatic Chronic3; H412	
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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.

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

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 tem-

porary 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.

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

If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest

congestion, shortness of breath, and/or fever.

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

Defatting dermatitis signs and symptoms may include a 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 : Proper protective equipment including chemical resistant

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for firefighters gloves are to be worn; chemical resistant suit is indicated if

large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to

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

Specific extinguishing meth-

ods

Standard procedure for chemical fires.

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions

Observe all relevant local and international regulations. Notify authorities if any exposure to the general public or the

environment occurs or is likely to occur.

Local authorities should be advised if significant spillages

cannot be contained.

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

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

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

Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

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

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

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appropriate absorbent material and dispose of safely. Remove

contaminated soil and dispose of safely.

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

Ventilate contaminated area thoroughly.

If contamination of site occurs remediation may require spe-

cialist advice.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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

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

Section 8 of this Safety Data Sheet.

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

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

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containers, sampling, switch loading, gauging, vacuum truck operations, and mechanical movements. These activities may lead to static discharge e.g. spark formation. Restrict line velocity during pumping in order to avoid generation of electrostatic discharge (≤ 1 m/s until fill pipe submerged to twice its diameter, then ≤ 7 m/s). Avoid splash filling. Do NOT use compressed air for filling, discharging, or handling operations.

Refer to guidance under Handling section.

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

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

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Refer to section 15 for any additional specific legislation cov-

ering the packaging and storage of this product.

Further information on storage stability

Storage Temperature:

Ambient.

Bulk storage tanks should be diked (bunded).

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

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

harmful or toxic to man or to the environment.

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

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

ble.

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

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

zinc silicate paint.

Unsuitable material: Avoid prolonged contact with natural,

butyl or nitrile rubbers.

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

near containers.

7.3 Specific end use(s)

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

tered uses under REACH.

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

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
Cumene	98-82-8	GVI	10 ppm 50 mg/m3	HR OEL
		nation: Classified as given in the directive	a substance that irritates the es, 2019/1831	skin (H315) or
Cumene		STEL	50 ppm 250 mg/m3	HR OEL
		nation: Classified as given in the directive	a substance that irritates the es, 2019/1831	skin (H315) or
Benzene	71-43-2	GVI	0,5 ppm 1,65 mg/m3	HR OEL
	such notice is egory 1A acco	given in the directive ording to Regulation	a substance that irritates the es, Substance classified as c (EC) No. 1272/2008, Substa g to Regulation (EC) No. 127	arcinogen cat- nce classified
Benzene		TWA	0,25 ppm 0,8 mg/m3	Shell Internal Standard (SIS) for 8-12 hour TWA.
Benzene		STEL	2,5 ppm 8 mg/m3	Shell Internal Standard (SIS) for 15 min (STEL)

Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
Benzene	71-43-2	Benzene: 28 μg/l (Blood)	End of shift	HR BEI
		Benzene: 0.36 micromol per litre (Blood)	End of shift	HR BEI
		S-phenyl mercapturic acid: 46 µg/g creatinine (Urine)	End of shift	HR BEI

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S-phenyl mercapturic acid: 21.7

µmol/mol creatinine
(Urine)

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

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

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

Substance name		Environmental Compartment	Value
Remarks:	Substance is a hydrocarbon with a complex, unknown or variable composition. Conventional methods of deriving PNECs are not appropriate and it is		•
		ble to identify a single representative PNEC for	

8.2 Exposure controls

Engineering measures

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

Use sealed systems as far as possible.

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

Local exhaust ventilation is recommended.

Firewater monitors and deluge systems are recommended.

Eye washes and showers for emergency use.

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

General Information:

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

Define procedures for safe handling and maintenance of controls.

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

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

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

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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. Contami-

izer is recommended.

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

For prolonged or repeated exposures use impervious clothing

nated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moistur-

over parts of the body subject to exposure.

If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Standard, and provide employee skin care programmes.

Protective clothing approved to EU Standard EN14605.

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

assessment deems it so.

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

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

ratus.

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

priate combination of mask and filter.

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

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : Liquid.

Colour : colourless

Odour : aromatic

Odour Threshold : Data not available

Melting point/freezing point : Data not available

Boiling point/boiling range : 150 - 185 °C

Flammability

Flammability (solid, gas) : Not applicable

Flammability (liquids) : Flammable liquid and vapour.

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / upper flammability limit

7 %(V)

Lower explosion limit / Lower flammability limit : 0,6 %(V)

Flash point : 38 - 50 °C

Method: IP 170

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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

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 tem-

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perature, 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,

exposure skin or eye contact, and accidental ingestion.

Acute toxicity

Components:

Hydrocarbons, C9, aromatics:

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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:

Species : Guinea pig

Method : OECD Test Guideline 406

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

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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

475

Remarks: Based on available data, the classification criteria

are not met.

Germ cell mutagenicity- As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

Carcinogenicity

Product:

Remarks : Contains Cumene, CAS# 98-82-8.

An increased tumour incidence has been observed in experimental animals; the significance of this finding to man is un-

known.

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.

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Cumene	Carcinogenicity Category 1B
Benzene	Carcinogenicity Category 1A

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

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:

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Species : Rat, male and female

Application Route : Oral

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

Target Organs : No specific target organs noted

Species : Rat, male and female

Application Route : Inhalation Test atmosphere : vapour

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

Target Organs : No specific target organs noted

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

Components:

Hydrocarbons, C9, aromatics:

Remarks : Classifications by other authorities under varying regulatory

frameworks may exist.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Hydrocarbons, C9, aromatics:

Toxicity to fish : LC50 (Oncorhynchus mykiss (rainbow trout)): 9,2 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Remarks: Toxic

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

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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

particles and will not be mobile.

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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

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 collector or contractor should be established beforehand.

Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional,

national, and local laws and regulations.

Local regulations may be more stringent than regional or na-

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tional requirements and must be complied with.

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

nical aspects at controlling pollutions from ships.

Contaminated packaging : Drain container thoroughly.

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

cut or weld uncleaned drums.

Send to drum recoverer or metal reclaimer.

Comply with any local recovery or waste disposal regulations.

SECTION 14: Transport information

14.1 UN number or ID number

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

14.2 UN proper shipping name

ADN : PETROLEUM DISTILLATES, N.O.S.

(NAPHTHA)

ADR : PETROLEUM DISTILLATES, N.O.S.
RID : PETROLEUM DISTILLATES, N.O.S.
IMDG : PETROLEUM DISTILLATES, N.O.S.

(NAPHTHA)

IATA : Petroleum distillates, n.o.s.

14.3 Transport hazard class(es)

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

14.4 Packing group

ADN

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

ADR

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

RID

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

IMDG

Packing group : III Labels : 3

IATA

Packing group : III Labels : 3

14.5 Environmental hazards

ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

14.6 Special precautions for user

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

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

needs to comply with in connection with transport.

14.7 Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

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

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

space entry.

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High

Concern for Authorisation (Article 59).

This product does not contain substances of very high concern (Regu-

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lation (EC) No 1907/2006 (REACH),

Article 57).

REACH - List of substances subject to authorisation : Product is not subject to Authorisa-

(Annex XIV) tion under REACH.

Other regulations:

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

Product is subject to a regulation to prevent major accidents involving hazardous substances (Official Gazette 44/2014), under Seveso III (2012/18/EU).

Law on Chemicals; Ordinance on the protection of workers of exposure to dangerous chemicals at work, exposure limit values and biological limit values, in Croatian; Waste management Act; Rules on waste transport and disposal.

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (CLP); Commission Regulation (EU) 2020/878 of 18 June 2020 amending Annex II to Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

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

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

DSL : Listed

IECSC : Listed

TSCA : Listed

KECI : Listed

PICCS : Listed

TCSI : Listed

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

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HR BEI : Croatia. Biological Exposure Limits

HR OEL : Croatia. Regulations on limit values for exposure to hazardous

substances at work and on the biological limit values.

HR OEL / STEL : Short term exposure limit HR OEL / GVI : time weighted average

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road: AIIC - Australian Inventory of Industrial Chemicals: ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA -European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI -Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

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

erators.

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

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

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

ered to be PBT or vPvB.

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

from the previous version.

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

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

Sources of key data used to compile the Safety Data Sheet

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

Identified Uses according to the Use Descriptor System Uses - Worker

Title : Manufacture of substance

- Industrial

Uses - Worker

Title : Distribution of substance

- Industrial

Uses - Worker

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

- Industrial

Uses - Worker

Title : Use in coatings

Industrial

Uses - Worker

Title : Use in coatings

- Professional

Uses - Worker

Title : Use in Cleaning Agents

- Industrial

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Uses - Worker

Title : Use in Cleaning Agents

- Professional

Uses - Worker

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

- Industrial

Uses - Worker

Title : Lubricants

- Industrial

Uses - Worker

Title : Lubricants

- Professional

Low Environmental Release

Uses - Worker

Title : Lubricants

- Professional

High Environmental Release

Uses - Worker

Title : Metal working fluids / rolling oils

- Industrial

Uses - Worker

Title : Metal working fluids / rolling oils

- Professional

Uses - Worker

Title : Use as binders and release agents

- Industrial

Uses - Worker

Title : Use as binders and release agents

- Professional

Uses - Worker

Title : Use in agrochemicals

- Professional

Uses - Worker

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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 : Use in road and construction products

- Professional

Uses - Worker

Title : Use in laboratories

- Industrial

Uses - Worker

Title : Use in laboratories

- Professional

Uses - Worker

Title : Water treatment chemicals

- Industrial

Uses - Worker

Title : Water treatment chemicals

- Professional

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.

HR / EN

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Exposure Scenario - Worker

30000000750	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Manufacture of substance- Industrial
Use Descriptor	Sector of Use: SU3, SU8, SU9 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15 Environmental Release Categories: ERC1, ERC4, ESVOC SpERC 1.1.v1
Scope of process	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

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

Contributing Scenarios	Risk Management Measures
General exposures (closed systems)PROC1PROC2PROC	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Process samplingPROC8b	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.
Bulk transfers(open systems)PROC8b	No other specific measures identified.
Bulk transfers(closed systems)PROC8b	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.
Section 2.2	Control of Environmental Exposure

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Substance is complex UVCB.	
Predominantly hydrophobic.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	2,4E+04
Fraction of Regional tonnage used locally:	1
Annual site tonnage (tonnes/year):	2,4E+04
Maximum daily site tonnage (kg/day):	7,9E+04
Frequency and Duration of Use	, ,
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	1000
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	100
Release fraction to air from process (initial release prior to RMM):	1,0E-02
Release fraction to wastewater from process (initial release prior to	3,0E-04
RMM):	,
Release fraction to soil from process (initial release prior to RMM):	1,0E-04
Technical conditions and measures at process level (source) to 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 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	1
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
,	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	·
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	, i
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	
	I
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

30000000753	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Distribution of substance- Industrial
Use Descriptor	Sector of Use: SU3, SU8, SU9 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15 Environmental Release Categories: ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7, ESVOC SpERC 1.1b.v1
Scope of process	Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities.

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

Contributing Scenarios	Risk Management Measures
General exposures (closed systems)PROC1PROC2PROC	No other specific measures identified.
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 Environ	nmontal Exposure			
Cubatanas is sampley LIVCD	nmentai 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 n	nanagement			
Local freshwater dilution factor:		10		
Local marine water dilution factor:		100		
Other Operational Conditions affecting Enviro				
Release fraction to air from process (initial release	e prior to RMM):	1,0E-03		
Release fraction to wastewater from process (initi	al release prior to	1,0E-05		
RMM):	·			
Release fraction to soil from process (initial releas	se prior to RMM):	1,0E-05		
Technical conditions and measures at process		event release		
Common practices vary across sites thus conserv				
lease estimates used.	·			
Technical onsite conditions and measures to sions and releases to soil		arges, air emis-		
Risk from environmental exposure is driven by fre				
Prevent discharge of undissolved substance to or wastewater.				
No wastewater treatment required.				
Treat air emission to provide a typical removal eff	iciency of (%)	90		
Treat onsite wastewater (prior to receiving water of		90		
Treat onsite wastewater (prior to receiving water of the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant	discharge) to provide			
Treat onsite wastewater (prior to receiving water of the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant wastewater treatment required.	discharge) to provide t, no secondary	0		
Treat onsite wastewater (prior to receiving water of the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant wastewater treatment required. Organisational measures to prevent/limit release	discharge) to provide t, no secondary	0		
Treat onsite wastewater (prior to receiving water of the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant wastewater treatment required.	t, no secondary see from site	0		
Treat onsite wastewater (prior to receiving water of the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant wastewater treatment required. Organisational measures to prevent/limit releated Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaim	t, no secondary see from site med.	0		
Treat onsite wastewater (prior to receiving water of the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant wastewater treatment required. Organisational measures to prevent/limit release Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclain Conditions and Measures related to municipal	t, no secondary se from site med. sewage treatment pl	0 0		
Treat onsite wastewater (prior to receiving water of the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant wastewater treatment required. Organisational measures to prevent/limit relead Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclain Conditions and Measures related to municipal Estimated substance removal from wastewater visited.	t, no secondary se from site med. sewage treatment pl	0		
Treat onsite wastewater (prior to receiving water of the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant wastewater treatment required. Organisational measures to prevent/limit release. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclair Conditions and Measures related to municipal Estimated substance removal from wastewater vist treatment (%)	discharge) to provide t, no secondary see from site med. sewage treatment placed a domestic sewage	0 0 ant 93,6		
Treat onsite wastewater (prior to receiving water of the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant wastewater treatment required. Organisational measures to prevent/limit release Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclain Estimated substance removal from wastewater visit treatment (%) Total efficiency of removal from wastewater after the removal from wastewater after the removal efficiency of re	discharge) to provide t, no secondary see from site med. sewage treatment placed a domestic sewage	0 0		
Treat onsite wastewater (prior to receiving water of the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant wastewater treatment required. Organisational measures to prevent/limit release Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclain Conditions and Measures related to municipal Estimated substance removal from wastewater via treatment (%) Total efficiency of removal from wastewater after (domestic treatment plant) RMMs (%)	discharge) to provide t, no secondary see from site med. sewage treatment pl a domestic sewage onsite and offsite	0 0 ant 93,6		
Treat onsite wastewater (prior to receiving water of the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant wastewater treatment required. Organisational measures to prevent/limit relead Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclain Conditions and Measures related to municipal Estimated substance removal from wastewater visit treatment (%) Total efficiency of removal from wastewater after (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based of	discharge) to provide t, no secondary see from site med. sewage treatment pl a domestic sewage onsite and offsite	0 0 ant 93,6		
Treat onsite wastewater (prior to receiving water of the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant wastewater treatment required. Organisational measures to prevent/limit release. Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclain conditions and Measures related to municipal Estimated substance removal from wastewater via treatment (%) Total efficiency of removal from wastewater after (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based of total wastewater treatment removal (kg/d)	discharge) to provide t, no secondary tse from site med. sewage treatment plate domestic sewage onsite and offsite on release following	0 0 0 ant 93,6 93,6 2,1E+05		
Treat onsite wastewater (prior to receiving water of the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant wastewater treatment required. Organisational measures to prevent/limit release Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclain Conditions and Measures related to municipal Estimated substance removal from wastewater vistreatment (%) Total efficiency of removal from wastewater after (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based of	discharge) to provide t, no secondary see from site med. sewage treatment plate domestic sewage onsite and offsite on release following m3/d)	0 0 0 ant 93,6 93,6 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: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15 Environmental Release Categories: ERC2, ESVOC SpERC 2.2.v1
Scope of process	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

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

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

Contributing Scenarios	Ris	sk Management Measures	
General exposures (closed systems)PROC1PROC2PRO	C3	No other specific measures identified.	
General exposures (open systems)PROC4	-	No other specific measures identified.	
Batch processes at elevated temperaturesOperation is carried out at elevated temperature (> 20°C above ambient temperature). Use in contained batch processesPROC3	ire er-	No other specific measures identified.	
Process samplingPROC3		No other specific measures identified.	
Laboratory activitiesPROC15		No other specific measures identified.	
Bulk transfersPROC8b		No other specific measures identified.	

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Mixing operations (open systems)PROC5	No other specific measures identified	d.
ManualTransfer from/pouring	No other specific measures identified	d.
from containersPROC8a	·	
Drum/batch transfersPROC8b	No other specific measures identified	d.
Production or preparation or	No other specific measures identified	d.
articles by tabletting, compres-		
sion, extrusion or pelletisa-		
tionPROC14	No other energies manaures identifies	J
Drum and small package fill-ingPROC9	No other specific measures identified	1.
Equipment cleaning and	No other specific measures identified	4
maintenancePROC8a	140 other specific measures identified	4.
Storage.PROC1PROC2	Store substance within a closed syst	em.
3	,	
	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in		0,1
Regional use tonnage (tonnes,		730
Fraction of Regional tonnage u		1
Annual site tonnage (tonnes/ye		730
Maximum daily site tonnage (k		7,3E+03
Frequency and Duration of U	Jse	
Continuous release.		400
Emission Days (days/year):	fluores and hourstale recommendate	100
	fluenced by risk management	40
Local freshwater dilution factor: Local marine water dilution factor:		10
	s affecting Environmental Exposure	100
	ocess (after typical onsite RMMs con-	1,0E-02
		1,02 02
sistent with EU Solvent Emissions Directive requirements): Release fraction to wastewater from process (initial release prior to		2,0E-04
RMM):	man process (million renewed price to	
Release fraction to soil from process (initial release prior to RMM):		1,0E-04
	easures at process level (source) to pr	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		
Risk from environmental expos		
Prevent discharge of undissolv		
wastewater.		
No wastewater treatment requ	0	
Treat air emission to provide a typical removal efficiency of (%)		0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)		
If discharging to domestic sewage treatment plant, no secondary		0
scomarging to domocito bow	age a camera plant, no occordary	-

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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 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 FCFTOC TRA tool has been used to estimate workplace exposures unless otherwise		

indicated.

Section 3.2 -Environment

CECTION 4

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

	SECTION 4	EXPOSURE SCENARIO
	Section 4.1 - Health	
	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management	
Measures/Operational Conditions outlined in Section 2 are implemented		tions outlined in Section 2 are implemented

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Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 - Environment

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

30000000755	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in coatings- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15 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 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 Sub-	Covers use of substance/product up to 100%	% (unless stated
stance in Mixture/Article	differently).,	,
Frequency and Duration of	Use	
	8 hours (unless stated differently).	
Other Operational Conditio		
Assumes use at not more that	an 20°C above ambient temperature (unless s	tated differently)
	ard of occupational hygiene is implemented.	• /
Contributing Scenarios	Risk Management Measures	
General exposures (closed systems)PROC1	No other specific measures identified.	
General exposures (closed systems) with sample collectionUse in contained systemsPROC2	No other specific measures identified.	
Film formation - force dry- ing, stoving and other tech- nologies.(closed sys- tems)Operation is carried out at elevated temperature (> 20°C above ambient temperature).PROC2	No other specific measures identified.	
Mixing operations (closed systems)General expo-	No other specific measures identified.	

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sures (closed sys-		
tems)PROC3	Night of the control	
Film formation - air dry- ingPROC4	No other specific measures identified.	
Preparation of material for applicationMixing operations (open systems)PROC5	No other specific measures identified.	
Spraying (automat- ic/robotic)PROC7	Carry out in a vented booth provided with	n laminar airflow.
ManualSprayingPROC7	Wear a respirator conforming to EN140 v 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 activitiesPROC15	No other specific measures identified.	
Material trans- fersDrum/batch transfer- sTransfer from/pouring from containersPROC9	No other specific measures identified.	
Production or preparation or articles by tabletting, compression, extrusion or pelletisationPROC14	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		•
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	•	7,6E+03
Fraction of Regional tonnage	, ,	1
Annual site tonnage (tonnes/		7,6E+03
Maximum daily site tonnage (2,5E+04
Frequency and Duration of		,
Continuous release.		
Emission Days (days/year):		300
	influenced by risk management	1 - 2 -
Local freshwater dilution factor		10
Local marine water dilution fa		100
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Release fraction to air from process (initial release prior to RMM):	9,8E-01
Release fraction to wastewater from process (initial release prior to	7,0E-04
RMM):	7,01-04
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re- lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no secondary	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide	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	
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	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 fo	r disposal
External treatment and disposal of waste should comply with applicable	local and/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/or regions
regulations.	loodi alla, ol logiolik

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

Section 3.2 -Environment

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

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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

3000000756	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in coatings- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19 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 o	f Use	
Covers daily exposures up to	o 8 hours (unless stated differently).	
Other Operational Condition	ons affecting Exposure	
Assumes use at not more th	an 20°C above ambient temperature (unless stated differently).	

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

Contributing Scenarios	Risk Management Measures
General exposures (closed sy tems)PROC1	ys- No other specific measures identified.
Filling/ preparation of equipme from drums or containers.Use contained systemsPROC2	· ·
General exposures (closed sy tems)Use in contained systemsPROC2	vs- No other specific measures identified.
Preparation of material for ap cationUse in contained batch processesPROC3	·
Film formation - air dry- ingOutdoorPROC4	No other specific measures identified.
Film formation - air dryingln-doorPROC4	No other specific measures identified.

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Preparation of material for appl cationIndoorPROC5	No other specific measures identified.	
Preparation of material for appl cationOutdoorPROC5	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	n- 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.	
ManualSprayingOutdoorPROC	Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours Limit the substance content in the mixture to 50 %. , or: Wear a full face respirator conforming to EN136 with Type A/P2 filter or better.	
Dipping, immersion and pouringIndoorPROC13	No other specific measures identified.	
Dipping, immersion and pouringOutdoorPROC13	No other specific measures identified.	
Laboratory activitiesPROC15	No other specific measures identified.	
Hand application - fingerpaints, pastels, adhesivesIndoorPROC19	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	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		

Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB.	Substance is complex UVCB.		
Predominantly hydrophobic.			
Readily biodegradable.	Readily biodegradable.		
Amounts Used			
Fraction of EU tonnage used	n region:	0,1	
Regional use tonnage (tonnes	s/year):	2,2E+03	
Fraction of Regional tonnage	used locally:	5,0E-04	
Annual site tonnage (tonnes/y	rear):	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	1
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	1
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
Fechnical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
ease 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.	
Prevent discharge of undissolved substance to or recover from onsite	
vastewater.	
No wastewater treatment required.	
Freat air emission to provide a typical removal efficiency of (%)	0
Freat onsite wastewater (prior to receiving water discharge) to provide	0
he required removal efficiency of >= (%)	
f discharging to domestic sewage treatment plant, no secondary	0
vastewater 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.	
Dan ditiana and Manager related to more in a larger tracture to	lant.
Conditions and Measures related to municipal sewage treatment p	
Estimated substance removal from wastewater via domestic sewage	93,6
reatment (%) Fotal efficiency of removal from wastewater after onsite and offsite	93,6
domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following	4,7E+03
otal wastewater treatment removal (kg/d)	4,7 = +03
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	
egulations.	iocai and/or region
oguidiono.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or region
regulations.	iocai aria, or region

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

30000000757		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use in Cleaning Agents- Industrial	
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC13 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 RISH MEASURES	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics	•	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article Covers use of substance/product up to 100% (unless stated differently).,		0% (unless stated
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently).		

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios Risk Management Measures 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	No other specific measures identifi	ed.
Cleaning with low-pressure washersPROC10	No other specific measures identifi	ed.
Cleaning with high pressure	Provide a good standard of genera	l ventilation (not less than
washersPROC7	3 to 5 air changes per hour).	a vortulation (not loco that
	Limit the substance content in the	product to 5 %.
		·
ManualSurfacesCleaningPROC10	No other specific measures identifi	ed.
Storage.PROC1	Store substance within a closed sy	rstem.
Section 2.2 Cont	rol of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in regi	on:	0,1
Regional use tonnage (tonnes/year)		320
Fraction of Regional tonnage used	ocally:	3,2E-01
Annual site tonnage (tonnes/year):	•	100
Maximum daily site tonnage (kg/day	<i>(</i>):	5,0E+03
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		20
Environmental factors not influer	nced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions afford		
Release fraction to air from process		1,0
Release fraction to wastewater from RMM):		3,0E-06
Release fraction to soil from proces		0
	es at process level (source) to pre	event release
Common practices vary across sites lease estimates used.	s thus conservative process re-	
	measures to reduce or limit disch	arges, air emis-
sions and releases to soil		
Risk from environmental exposure i		
Prevent discharge of undissolved so	ubstance to or recover from onsite	
wastewater.		
No wastewater treatment required.		
Treat air emission to provide a typic		70
Treat onsite wastewater (prior to red the required removal efficiency of >:		0
If discharging to domestic sewage t		0
wastewater treatment required.		
Organisational measures to preven		
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	

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

30000000758		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use in Cleaning Agents- Professional	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13 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 RISH MEASURES	K MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 10 differently).,	0% (unless stated
Frequency and Duration of Use		
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk	Management Measures	
Filling/ preparation of equipme from drums or containers.Dedicated facilityPROC8b		No other specific measures identified.	
Filling/ preparation of equipme from drums or containers.Non dedicated facilityPROC8a		Avoid carrying out activities involving exposure for more than 4 hours	
Automated process with (sem closed systems.Use in contair systemsPROC2	,	No other specific measures identified.	
Automated process with (sem closed systems.Drum/batch tr fersUse in contained batch processesPROC3	ans-	No other specific measures identified.	
Semi Automated process. (e.g Semi automatic application of care and maintenance prod- ucts)PROC4		No other specific measures identified.	

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ManualSurfacesCleaningDipping, immersion and pouringPROC13	No other specific measures identified.
ManualSurfacesCleaningPROC13	No other specific measures identified.
Cleaning with low-pressure washersRolling, Brushingno sprayingPROC10	No other specific measures identified.
Cleaning with high pressure washersSprayingIndoorPROC11	Limit the substance content in the product to 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 devicesPROC4	No other specific measures identified.
Storage.PROC1	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	2,0
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/	year):	1,0E-03
Maximum daily site tonnage ((kg/day):	2,7E-03
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
Environmental factors not i	nfluenced by risk management	
Local freshwater dilution factor	or:	10
Local marine water dilution factor:		100
	ns affecting Environmental Exposure	
	ride dispersive use (regional only):	2,0E-02
Release fraction to wastewat	er from wide dispersive use:	1,0E-06
	wide dispersive use (regional only):	0
	neasures at process level (source) to pr	event release
Common practices vary acros	ss sites thus conservative process re-	
lease estimates used.		
Technical onsite conditions and measures to reduce or limit discharges, air emis-		
sions and releases to soil		T
Risk from environmental expo		
No wastewater treatment req		
	a typical removal efficiency of (%)	0
Treat onsite wastewater (prio	r 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 local and/or regional regulations.		

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

indicated.

Section 3.2 - Environment

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

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

Section 4.2 - Environment

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

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

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

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or in combination.

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

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Exposure Scenario - 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: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b Environmental Release Categories: ERC4
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	of Use	
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditi	ons affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently)		

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

Contributing Scenarios	Risk Management Measures
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.
Filling/ preparation of equipment from drums or containers. Dedicated facilityPROC8b	No other specific measures identified.
Drilling mud (re-)formulationPROC3	No other specific measures identified.
Drill floor operationsPROC4	No other specific measures identified.
Operation of solids filtering equipment - vapour exposuresPROC4	
Treatment and disposal of filtered solidsPROC3	No other specific measures identified.
Process samplingPROC3	No other specific measures identified.

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

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	

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

Section 3.2 - Environment

No exposure assessment presented for the environment.

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

Qualitative approach used to conclude safe use.

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

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users 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: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18 Environmental Release Categories: ERC4, ERC7, ESVOC SpERC 4.6a.v1
Scope of process	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes.

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

			1
Contributing Scenarios	Ris	k Management Measures	
General exposures (closed		No other specific measures identified.	
systems)PROC1PROC2PROC	<u> </u>		
General exposures (open systems)PROC4		No other specific measures identified.	
Bulk transfersDedicated facili- tyPROC8b		No other specific measures identified.	
Filling/ preparation of equipme	ent	No other specific measures identified.	
from drums or containers.Non-	-		
dedicated facilityPROC8a			
Filling/ preparation of equipme	ent	No other specific measures identified.	
from drums or contain-			
ers.Dedicated facilityPROC8b			
Initial factory fill of equip-		No other specific measures identified.	
mentPROC9			
Operation and lubrication of		No other specific measures identified.	
high energy open equip-			
mentPROC17PROC18			

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M ID III D I		
ManualRolling, Brush-ingPROC10	No other specific measures identified	∌d.
Treatment by dipping and pou	r- No other specific measures identifie	
ingPROC13	The strict openine measures identified	, d.
SprayingPROC7	Carry out in a vented booth or extra	cted enclosure.
	-	
Maintenance (of larger plant	No other specific measures identified	∌d.
items) and machine set upDed	di-	
cated facilityPROC8b	Building and the second second	
Maintenance (of larger plant items) and machine set upOp-	Drain down and flush system prior to maintenance.	o equipment opening
eration is carried out at elevate		
temperature (> 20°C above		
ambient tempera-		
ture).Dedicated facilityPROC8	b	
Maintenance of small itemsNo		ed.
dedicated facilityPROC8a		
Remanufacture of reject articlesPROC9	No other specific measures identified	∍d.
Storage.PROC1PROC2	Store substance within a closed sys	stem.
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.	Control of Environmental Exposure	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used i	n region:	0,1
Regional use tonnage (tonnes		700
Fraction of Regional tonnage	used locally:	0,14
Annual site tonnage (tonnes/y		100
Maximum daily site tonnage (F		5,0E+03
Frequency and Duration of L	Jse	
Continuous release.		
Emission Days (days/year):		20
	nfluenced by risk management	T 40
Local freshwater dilution facto		10
Local marine water dilution fac		100
	as affecting Environmental Exposure	F 0E 02
•	ocess (initial release prior to RMM): r from process (initial release prior to	5,0E-03 3,0E-05
RMM):		
Release fraction to soil from process (initial release prior to RMM):		1,0E-03
	easures at process level (source) to p	revent release
	s sites thus conservative process re-	
lease estimates used.	and massures to reduce or limit disal	haraas air amis
sions and releases to soil	and measures to reduce or limit discl	iaiyes, ali elliis-
	sure is driven by freshwater sediment.	Τ
	ved substance to or recover from onsite	
wastewater.		
No wastewater treatment requ	ired.	

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	•
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	93,6
treatment (%)	
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)	2,1E+06
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

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

regulations.

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

Section 3.2 -Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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gies, either alone or in combination.

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

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

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Exposure Scenario - Worker

30000000785	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Lubricants- ProfessionalLow Environmental Release
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20 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 MEASURES	MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100 differently).,	0% (unless stated
Frequency and Duration of	Use	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational 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 R	isk Management Measures
General exposures (closed systems)PROC1PROC2PROC3	No other specific measures identified.
Operation of equipment containi engine oils and similar.PROC20	
General exposures (open systems)PROC4	No other specific measures identified.
Bulk transfersPROC8b	No other specific measures identified.
Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC8b	No other specific measures identified.
Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a	Avoid carrying out activities involving exposure for more than 4 hours
Operation and lubrication of high energy open equipmentIndoorPROC17PROC18	Provide extraction ventilation at points where emissions occur.

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Operation and lubrication of high energy open equipmentOut-doorPROC17		Ensure operation is undertaken of Avoid carrying out activities involved 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	e-
Maintenance of small itemsOption is carried out at elevated to perature (> 20°C above ambie temperature).Non-dedicated fatyPROC8a	em- ent	Drain or remove substance from in or maintenance.	equipment prior to brea	ık-
Engine lubricant servicePROC	9	No other specific measures identi	fied.	
ManualRolling, BrushingPRO	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	system.	
Section 2.2	Conti	rol of Environmental Exposure		
Substance is complex UVCB.		, , , , , , , , , , , , , , , , , , ,		1
Predominantly hydrophobic.				1
Readily biodegradable.				1
Amounts Used				1
Fraction of EU tonnage used in region:		on:	0,1	1
Regional use tonnage (tonnes			12	1
Fraction of Regional tonnage	used lo	ocally:	5,0E-04	1
Annual site tonnage (tonnes/year):			5,8E-03	1
Maximum daily site tonnage (kg/day):	1,6E-02	1
Frequency and Duration of Use				1
Continuous release.				1
Emission Days (days/year):			365	
Environmental factors not influen		ced by risk management]
Local freshwater dilution factor:			10]
Local marine water dilution factor:			100]
		cting Environmental Exposure]
Release fraction to air from process (in		(initial release prior to RMM):	1,0E-02]

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Release fraction to wastewater from process (initial release prior to RMM):	1,0E-02
Release fraction to soil from process (initial release prior to RMM):	1,0E-02
Technical conditions and measures at process level (source) to pro	
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	93,6
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	93,6
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	41
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable	local and/or regional
regulations.	_
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	

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

Section 3.2 - Environment

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

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

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Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20 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 or	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 differently). dard of occupational hygiene is implemented.	

Contributing Scenarios	Risk	Management Measures
General exposures (closed systems)PROC1PROC2PROC3		No other specific measures identified.
Operation of equipment conta engine oils and similar.PROC	_	No other specific measures identified.
General exposures (open systems)PROC4	-	No other specific measures identified.
Bulk transfersPROC8b		No other specific measures identified.
Filling/ preparation of equipme from drums or containers.Dedicated facilityPROC8b		No other specific measures identified.
Filling/ preparation of equipme from drums or containers.Non dedicated facilityPROC8a		Avoid carrying out activities involving exposure for more than 4 hours
Operation and lubrication of h energy open equipmentIn- doorPROC17PROC18	igh	Provide extraction ventilation at points where emissions occur.

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Operation and lubrication of high energy open equipmentOut-	Avoid carrying out operation for n	nore than 4 hours.	
doorPROC17			
Maintenance (of larger plant items)	No other specific measures identi	fied.	
and machine set upPROC8b			
Maintenance (of larger plant items)	Drain down system prior to equip	ment opening or mainte-	
and machine set upOperation is	nance.		
carried out at elevated tempera-			
ture (> 20°C above ambient tem-			
perature).Dedicated facili-			
tyPROC8b	Drain or remain authorized from		
Maintenance of small itemsOperation is carried out at elevated tem-	Drain or remove substance from	equipment prior to break-	
perature (> 20°C above ambient	in or maintenance.		
temperature).Non-dedicated facili-			
tyPROC8a			
Engine lubricant servicePROC9	No other specific measures identi	ified	
Engine labilitative envisor Needs	The earler openine measures lacing	mod.	
ManualRolling, BrushingPROC10	No other specific measures identi	fied.	
SprayingPROC11	Provide a good standard of gener	ral or controlled ventilation	
	(5 to 15 air changes per hour).		
	Avoid carrying out activities involved	ing exposure for more	
	than 4 hours		
	, or:		
	Wear a respirator conforming to E	N140 with Type A filter or	
	better.		
Treatment by dipping and pour-	No other specific measures identi	fied.	
ingPROC13			
Storage.PROC1PROC2	Store substance within a closed s	system.	
Section 2.2 Cont	rol 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)		12	
Fraction of Regional tonnage used le	ocally:	5,0E-04	
Annual site tonnage (tonnes/year):		5,8E-03	
Maximum daily site tonnage (kg/day):	1,6E-02	
Frequency and Duration of Use			
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not influen	ced by risk management		
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	
Other Operational Conditions affe			
Release fraction to air from wide dis		1,5E-01	
Release fraction to air from wide dis	persive 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 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 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)	40
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable regulations.	local and/or regional

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

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO	
Section 4.1 - Health		
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management		
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: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17 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	o 8 hours (unless stated differently).		
Other Operational Condition	ons affecting Exposure		
Assumes use at not more th	an 20°C above ambient temperature (unless stated differently).		

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

Contributing Soonaries	Diak I	Managamant Magaziros	
Contributing Scenarios		Management Measures	
General exposures (closed sys-		No other specific measures identified.	
tems)PROC1PROC2PROC3			
General exposures (open sys	;-	No other specific measures identified.	
tems)PROC4		·	
Bulk transfersPROC8b		No other specific measures identified.	
Filling/ preparation of equipme	ent	No other specific measures identified.	
from drums or contain-		·	
ers.PROC8bPROC5PROC9			
Process samplingPROC8b		No other specific measures identified.	
Treeses camping resear		The differ openine measures facilities.	
Metal machining opera-		No other specific measures identified.	
tionsPROC17			
Treatment by dipping and pou	ır-	No other specific measures identified.	
ingPROC13	~ .	The earth opening in casaroo laoritinoa.	
iligi 10010			

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

Section 2.2	Control of Environmental Exposure	
	•	
Substance is complex UVCE		
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used		0,1
Regional use tonnage (tonne		10
Fraction of Regional tonnage		1
Annual site tonnage (tonnes		10
Maximum daily site tonnage		500
Frequency and Duration of	f Use	
Continuous release.		
Emission Days (days/year):		20
	influenced by risk management	
Local freshwater dilution fac-	tor:	10
Local marine water dilution factor:		100
	ons affecting Environmental Exposure	
Release fraction to air from	process (initial release prior to RMM):	2,0E-02
Release fraction to wastewa RMM):	ter from process (initial release prior to	3,0E-05
Release fraction to soil from	process (initial release prior to RMM):	0
Technical conditions and	measures at process level (source) to p	revent release
Common practices vary acro	oss sites thus conservative process re-	
lease estimates used.		
	is and measures to reduce or limit disc	harges, air emis-
sions and releases to soil		
	posure is driven by freshwater.	
Prevent discharge of undisse	olved substance to or recover from onsite	

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wastewater.		
No wastewater treatment required.		
Treat air emission to provide a typical removal efficiency of (%)	70	
Treat onsite wastewater (prior to receiving water discharge) to provide	0	
the required removal efficiency of >= (%)		
If discharging to domestic sewage treatment plant, no secondary	0	
wastewater treatment required.		
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures related to municipal sewage treatment p	lant	
Estimated substance removal from wastewater via domestic sewage	93,6	
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite	93,6	
(domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following	8,3E+05	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
Conditions and Measures related to external treatment of waste 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 2.1 Health	

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	

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: PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17 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 o	f Use	
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Condition	ons affecting Exposure	
	an 20°C above ambient temperature (unles	

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios **Risk Management Measures** General exposures (closed sys-No other specific measures identified. tems)PROC1PROC2PROC3 Bulk transfersPROC8b No other specific measures identified. Filling/ preparation of equipment from drums No other specific measures identified. or containers.PROC5PROC8aPROC8bPROC9 Process samplingDedicated facilityPROC8b No other specific measures identified. Metal machining operationsPROC17 Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). ManualRolling, BrushingPROC10 No other specific measures identified. SprayingPROC11 Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).

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	Avoid carrying out activi	ties involving exposure f	
	more than 4 hours		
	, or:		
	Wear a respirator confor	ming to EN140 with Typ	
	A/P2 filter or better.		
Treatment by dipping and pouringPROC13	No other specific measures identified.		
Equipment cleaning and maintenance-	Drain down system prior	r to equipment opening o	
PROC8aPROC8b	maintenance.		
Storage.PROC1PROC2	Store substance within a closed system.		
Section 2.2 Control of Env	rironmental 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):		5,0	
Fraction of Regional tonnage used locally:		5,0E-04	
Annual site tonnage (tonnes/year):		2,5E-03	
Maximum daily site tonnage (kg/day):		6,8E-03	
Frequency and Duration of Use			
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not influenced by ris	sk management		
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	
Other Operational Conditions affecting Env			
Release fraction to air from wide dispersive use (regional only):		5,0E-02	
Release fraction to wastewater from wide disp		2,5E-02	
Release fraction to soil from wide dispersive use (regional only): 0		-	
Technical conditions and measures at prod		event release	
Common practices vary across sites thus conslease estimates used.	servative process re-		
Technical onsite conditions and measures	to reduce or limit disch	arges air emis-	
sions and releases to soil	to roudoo or mine dioon	argoo, an onno	
Risk from environmental exposure is driven by	y 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 re			
Do not apply industrial sludge to natural soils.			
Sludge should be incinerated, contained or re-	claimed.		
Conditions and Measures related to munic	ipal sewage treatment p	lant	
Estimated substance removal 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	

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

Section 3.2 - Environment

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

	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO
Continu 4.4 Hookk	

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 occitatio - W	orker —
30000000790	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as binders and release agents- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC6, PROC7, PROC8b, PROC10, PROC13, PROC14 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 by spraying, brushing, and handling of waste.

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

. , , , , ,		
Contributing Scenarios F	Risk Management Measures	
Material transfersUse in con-	No other specific measures identified.	
tained sys- temsPROC1PROC2PROC3		
Drum/batch transfersPROC8b	No other specific measures identified.	
Mixing operations (closed systems)PROC3	No other specific measures identified.	
Mixing operations (open systems)PROC4	No other specific measures identified.	
Mold formingPROC14	No other specific measures identified.	
Casting operations(open systems)Operation is carried out at elevated temperature (> 20°C above ambient temperature). Aerosol generation due to elevated process temperature-PROC6		
SprayingMachinePROC7	Minimise exposure by partial enclosure of the operation or	

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	equipment and provide extract ventila	tion at openings
	equipment and provide extract ventile	don at openings.
SprayingManualPROC7	Provide a good standard of general o to 15 air changes per hour). Avoid carrying out activities involving 4 hours	`
ManualRolling, Brush- ingPROC10	No other specific measures identified	
Dipping, immersion and pour- ingPROC13	No other specific measures identified	
Storage.PROC1PROC2	Store substance within a closed syste	em.
Section 2.2 Co	ontrol of Environmental Exposure	
Substance is complex UVCB.	-	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in r	egion:	0,1
Regional use tonnage (tonnes/ye		70
Fraction of Regional tonnage use		1
Annual site tonnage (tonnes/year		70
Maximum daily site tonnage (kg/		3,5E+03
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		20
Environmental factors not influ	uenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor	r:	100
Other Operational Conditions	affecting Environmental Exposure	
Release fraction to air from proce	ess (initial release prior to RMM):	1,0
Release fraction to wastewater free RMM):	rom process (initial release prior to	3,0E-06
,	cess (initial release prior to RMM):	0
	sures at process level (source) to pro	
	ites thus conservative process re-	
lease estimates used.	med tride derider valive process re	
	nd measures to reduce or limit discha	arges, air emis-
sions and releases to soil		3 - 1, -
Risk from environmental exposur	re is driven by freshwater.	
	d substance to or recover from onsite	
wastewater.		
No wastewater treatment require	ed.	
Treat air emission to provide a ty		80
	receiving water discharge) to provide	0
the required removal efficiency o		
If discharging to domestic sewag wastewater treatment required.	e treatment plant, no secondary	0
Organisational measures to pr	event/limit release from site	<u> </u>
Do not apply industrial sludge to		
Sludge should be incinerated, co		
<u> </u>		

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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		

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		
		peen used to estimate workplace exposures unless otherwise

indicated.

Section 3.2 -Environment

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

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

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

30000000791	000000791	
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use as binders and release agents- Professional	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC6, PROC8a, PROC8b, PROC10, PROC11, PROC14 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.10b.v1	
Scope of process	Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste.	

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

Contributing Scenarios Risk Management Measures

Contributing Scenarios	RISK Management Measures
Bulk transfersUse in contained systemsPROC1PROC2PROC	
Drum/batch transfer- sPROC8aPROC8b	No other specific measures identified.
Mixing operations (closed systems)PROC3	No other specific measures identified.
Mixing operations (open systems)PROC4	No other specific measures identified.
Mold formingPROC14	No other specific measures identified.
Casting operations(open systems)Operation is carried out elevated temperature (> 20°C above ambient temperature).PROC6	Provide extraction ventilation at points where emissions occur.
SprayingMachinePROC11	Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. , or: Wear a respirator conforming to EN140 with Type A filter or

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	better.	
SprayingManualPROC11	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours	
ManualRolling, BrushingPROC10	No other specific measures identified.	
Storage.PROC1PROC2	Store substance within a closed system.	
Section 2.2 Co	ontrol of Environmental Exposure	
Substance is complex UVCB.	•	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used		1
Fraction of EU tonnage used in re	eaion:	0,1
Regional use tonnage (tonnes/ye		30
Fraction of Regional tonnage use		5,0E-04
Annual site tonnage (tonnes/year	•	1,5E-02
Maximum daily site tonnage (kg/		4,1E-02
Frequency and Duration of Use		,
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influ	enced by risk management	1
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions a	affecting Environmental Exposure	
Release fraction to air from wide		9,5E-01
Release fraction to wastewater from wide dispersive use:		2,5E-02
Release fraction to soil from wide dispersive use (regional only):		2,5E-02
Technical conditions and meas	sures at process level (source) to pr	event release
Common practices vary across s	ites thus conservative process re-	
lease estimates used.		
	d measures to reduce or limit disch	arges, air emis-
sions and releases to soil		_
Risk from environmental exposur	· · · · · · · · · · · · · · · · · · ·	
No wastewater treatment require		<u> </u>
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 o		0
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.		U
Organisational measures to pr	event/limit release from site	
Do not apply industrial sludge to		
Sludge should be incinerated, co		
	ed to municipal sewage treatment p	
Estimated substance removal fro treatment (%)	ed to municipal sewage treatment point wastewater via domestic sewage wastewater after onsite and offsite	93,6 93,6

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(domestic treatment plant) RMMs (%)		
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 Macazines 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 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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SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in agrochemicals- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.11a.v1
Scope of process	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Sub-	Covers use of substance/product up to 100% (unless stated	
stance in Mixture/Article	differently).,	
Frequency and Duration of	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	
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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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		610
Fraction of Regional tonnage		2,0E-03
Annual site tonnage (tonnes/y	•	1,2
Maximum daily site tonnage (3,4
Frequency and Duration of	<u> </u>	,
Continuous release.		
Emission Days (days/year):		365
	nfluenced by risk management	000
Local freshwater dilution factor		10
Local marine water dilution fa		100
	ns affecting Environmental Exposure	100
•	ide dispersive use (regional only):	9,0E-01
Release fraction to wastewate		1,0E-02
	vide dispersive use (regional only):	9.0E-02
	, , ,	- 1
	leasures at process level (source) to pr	event release
	ss sites thus conservative process re-	
lease estimates used.	and massures to reduce or limit disch	organ air amia
	and measures to reduce or limit disch	larges, air emis-
sions and releases to soil	acces in deitron burneil	<u> </u>
Risk from environmental expo	•	
No wastewater treatment req		
	a typical removal efficiency of (%)	0
	r to receiving water discharge) to provide	0
the required removal efficience		
	vage treatment plant, no secondary	0
wastewater treatment require		
	prevent/limit release from site	
Do not apply industrial sludge		
Sludge should be incinerated	, contained or reclaimed.	
Canditions and Massures v		lant
	elated to municipal sewage treatment p	
	from wastewater via domestic sewage	93,6
treatment (%)	and the state of t	00.0
	m wastewater after onsite and offsite	93,6
(domestic treatment plant) RN		4.75 . 00
	age (MSafe) based on release following	4,7E+03
total wastewater treatment re		2.05.02
Assumed domestic sewage to	2,0E+03	
	elated to external treatment of waste fo	
External treatment and dispose regulations.	sal of waste should comply with applicable	e local and/or regional
Conditions and measures r	elated to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional		

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regulations.

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16 Environmental Release Categories: ERC7, ESVOC SpERC 7.12a.v1
Scope of process	Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,	
Frequency and Duration of		
	o 8 hours (unless stated differently).	
Other Operational Condition		
	an 20°C above ambient temperature (unless stated differently dard of occupational hygiene is implemented.	
Contributing Scenarios	Risk Management Measures	
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.	
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.	
General exposures (closed systems)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 UVCE	3.	
Predominantly hydrophobic.		
Readily biodegradable.		
Amounts Used	<u> </u>	
Fraction of EU tonnage used	l in region: 0,1	
Regional use tonnage (tonne		

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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.	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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30000000794	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16 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 Conditions affecting Exposure			
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.			

Contributing Scenarios	Ris	sk Management Measures	
Bulk transfersDedicated facilityPROC8b	-	No other specific measures identified.	
Drum/batch transfersDedicate facilityPROC8b	ed	No other specific measures identified.	
Refueling.Dedicated facili- tyPROC8b		No other specific measures identified.	
General exposures (closed systems)PROC1PROC2PRO	C3	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.	
O 191-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	1
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 (domestic treatment plant) RMMs (%)	93,6
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	
Combustion emissions limited by required exhaust emission controls. Waste combustion emissions considered in regional exposure assessm	
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is g	enerated.

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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SECTION 1	EXPOSURE SCENARIO TITLE
Title	Functional Fluids- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC8a, PROC9, PROC20 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 Conditions affecting Exposure		
	an 20°C above ambient temperature (unless stated different and of occupational hygiene is implemented.	ntly).

Contributing Scenarios	Ris	k Management Measures	
Drum/batch transfersNon-		Use drum pumps.	
dedicated facilityPROC8a			
Transfer from/pouring from cor tainersPROC9	n-	No other specific measures identified.	
Filling/ preparation of equipme	nt	No other specific measures identified.	
from drums or contain-			
ers.PROC9			
General exposures (closed		No other specific measures identified.	
systems)PROC1PROC2PROC			
Operation of equipment contai	n-	No other specific measures identified.	
ing engine oils and simi-			
lar.PROC20			
Operation of equipment contai	n-	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		Nicode and Comment of the CC of	
Remanufacture of reject arti-		No other specific measures identified.	

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clesPROC9			
Equipment maintenance- PROC8a	Drain down system prior to equipme nance.	nt opening or mainte-	
Storage.PROC1PROC2	Store substance within a closed syst	em.	
Section 2.2 Co	ontrol of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in re	egion:	0,1	
Regional use tonnage (tonnes/ye		15	
Fraction of Regional tonnage use		5,0E-04	
Annual site tonnage (tonnes/year		7,5E-03	
Maximum daily site tonnage (kg/d		2,1E-02	
Frequency and Duration of Use		,	
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not influ	enced by risk management	1 000	
Local freshwater dilution factor:		10	
Local marine water dilution factor	r:	100	
	affecting Environmental Exposure	1.00	
Release fraction to air from wide		5,0E-02	
Release fraction to wastewater fr		2,5E-02	
Release fraction to soil from wide	2,5E-02		
	sures at process level (source) to pr		
	ites thus conservative process re-		
	d measures to reduce or limit disch	argos air omis-	
sions and releases to soil	u measures to reduce or minit discri	arges, air eims-	
Risk from environmental exposur	a is driven by freshwater		
No wastewater treatment require			
Treat air emission to provide a typical removal efficiency of (%)		0	
Treat onsite wastewater (prior to receiving water discharge) to provide		0	
the required removal efficiency of >= (%)			
If discharging to domestic sewage treatment plant, no secondary		0	
wastewater treatment required.			
Organisational measures to pr	event/limit release from site	1	
Do not apply industrial sludge to			
Sludge should be incinerated, co			
Conditions and Measures relat	ed to municipal sewage treatment p	lant	
	m wastewater via domestic sewage	93,6	
treatment (%)			
Total efficiency of removal from wastewater after onsite and offsite		93,6	
Total efficiency of removal from v			
(domestic treatment plant) RMMs	s (%)	52	
(domestic treatment plant) RMMs Maximum allowable site tonnage	s (%) (MSafe) based on release following	52	
(domestic treatment plant) RMMs	s (%) (MSafe) based on release following val (kg/d)	52 2,0E+03	

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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 FORTOC TRA tool has been used to estimate workplace exposures unless otherwise.

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 - Environment

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

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

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

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Exposure occinano - Worker	
30000000795	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Functional Fluids- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9 Environmental Release Categories: ERC7, ESVOC SpERC 7.13a.v1
Scope of process	Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT
SECTION 2	MEASURES
Section 2.1	Control of Worker Exposure
Product Characteristics	
Physical form of product	Liquid, vapour pressure < 0.5 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of	Use
Covers daily exposures up to	8 hours (unless stated differently).
Other Operational Conditio	ns affecting Exposure
	n 20°C above ambient temperature (unless stated differently).
Assumes a good basic standa	ard of occupational hygiene is implemented.
_	
Contributing Scenarios	Risk Management Measures
Bulk transfers(closed systems)PROC1PROC2	No other specific measures identified.
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.
Filling of arti- cles/equipment(closed sys-	No other specific measures identified.
tems)PROC9	
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.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne		15
Fraction of Regional tonnage		0,67
Annual site tonnage (tonnes/		10
Maximum daily site tonnage		500
Frequency and Duration of	Use	T
Continuous release.		
Emission Days (days/year):		20
	influenced by risk management	
Local freshwater dilution fact		10
Local marine water dilution fa		100
	ns affecting Environmental Exposure	
Release fraction to air from p	rocess (initial release prior to RMM):	5,0E-03
Release fraction to wastewat	er from process (initial release prior to	3,0E-05
RMM):		
Release fraction to soil from	process (initial release prior to RMM):	1,0E-03
Technical conditions and n	neasures at process level (source) to pr	event release
Common practices vary acro	ss sites thus conservative process re-	
lease estimates used.		
Technical onsite condition sions and releases to soil	s and measures to reduce or limit disch	arges, air emis-
	osure is driven by freshwater.	
	olved substance to or recover from onsite	
wastewater.	inved substance to or recover from orisite	
No wastewater treatment rec	uired	
	a typical removal efficiency of (%)	0
	or to receiving water discharge) to provide	0
the required removal efficien		U
	wage treatment plant, no secondary	0
wastewater treatment require		U
•	o prevent/limit release from site	
Do not apply industrial sludge		
Sludge should be incinerated		
Sludge should be inclinerated	i, contained of reclaimed.	
Conditions and Measures	elated to municipal sewage treatment p	lant
	Il from wastewater via domestic sewage	93,6
treatment (%)	Hadiomator via domicotic sowage	30,0
	om wastewater after onsite and offsite	93,6
(domestic treatment plant) R		30,0
	age (MSafe) based on release following	8,3E+05
total wastewater treatment re	• · ,	3,02100
Assumed domestic sewage t		2,0E+03
Assumed domestic sewage t		
Conditions and Measures r		

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regulations.

Conditions and measures related to external recovery of waste

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

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure occinatio - Worker	
30000000802	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in road and construction products- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13 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 Sub-	Covers use of substance/product up to 100% (unless stated
stance in Mixture/Article	differently).,
Frequency and Duration of	Use
Covers daily exposures up to	8 hours (unless stated differently).
Other Operational Conditio	
	an 20°C above ambient temperature (unless stated differently).
	ard of occupational hygiene is implemented.
9	, , , , , , , , , , , , , , , , , , , ,
Contributing Scenarios	Risk Management Measures
Drum/batch transfersNon-	No other specific measures identified.
dedicated facilityPROC8a	·
Drum/batch transfersDedi-	No other specific measures identified.
cated facilityPROC8b	·
Drum/batch transfersDedi-	Ensure operation is undertaken outdoors.
cated facilityOperation is	Avoid carrying out activities involving exposure for more than
carried out at elevated tem-	4 hours
perature (> 20°C above	
ambient tempera-	
ture).PROC8b	
ManualRolling, Brush-	Ensure operation is undertaken outdoors.
ingPROC10	
Spraying/ fogging by ma-	Ensure operation is undertaken outdoors.
chine applicationOperation	Wear a respirator conforming to EN140 with Type A filter or
is carried out at elevated	better.
temperature (> 20°C above	Limit the substance content in the mixture to 50 %.
ambient tempera-	
ture).PROC11	
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 op nance.	ening or mainte-
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		
Continuous release.		
Emission Days (days/year):		365
	nfluenced by risk management	
Local freshwater dilution factor		10
Local marine water dilution fa		100
	ns affecting Environmental Exposure	
	ide dispersive use (regional only):	9,5E-01
Release fraction to wastewate		1,0E-02
	wide dispersive use (regional only):	4,0E-02
	neasures at process level (source) to pro-	event release
	ss sites thus conservative process re-	
lease estimates used.	·	
Technical onsite conditions	and measures to reduce or limit discha	arges, air emis-
sions and releases to soil		
Risk from environmental expo	•	
No wastewater treatment req		
	a typical removal efficiency of (%)	0
	r to receiving water discharge) to provide	0
the required removal efficience		
5 5	wage treatment plant, no secondary	0
wastewater treatment require	d.	
	prevent/limit release from site	
Do not apply industrial sludge		
Sludge should be incinerated	, contained or reciaimed.	
Conditions and Measures r	elated to municipal sewage treatment p	lant
	I from wastewater via domestic sewage	93,6
treatment (%)	i nom wasiewater via domestie sewage	33,0
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	om wastewater after onsite and offsite	93,6
(domestic treatment plant) RM		33,0

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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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Expeditio Georgiano Trenton	
30000000806	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC10, PROC15 Environmental Release Categories: ERC2, ERC4
Scope of process	Use of the substance within laboratory settings, including material transfers and equipment cleaning.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Worker Exposure	Control of Worker Exposure	
Product Characteristics			
Physical form of product	Liquid, vapour pressure 0.5 - 1	0 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers use of substance/produdifferently).,	uct up to 100% (unless stated	
Frequency and Duration of	of Use		
Covers daily exposures up	to 8 hours (unless stated differentl	y).	
Other Operational Condit	ons affecting Exposure		
	nan 20°C above ambient temperat dard of occupational hygiene is im		
Contributing Scenarios	Risk Management Measures		
Laboratory activitiesPROC15	No other specific measures ide	entified.	
CleaningPROC10	No other specific measures ide	ntified.	
Section 2.2	Control of Environmental Ex	posure	
Substance is complex UVC	B.		
Predominantly hydrophobic			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage use	d in region:	0,1	
Regional use tonnage (tonn	es/year):	2,5	
Fraction of Regional tonnage used locally:		0,8	
Annual site tonnage (tonnes/year):		2,0	
Maximum daily site tonnage	e (kg/day):	100	
Frequency and Duration of	of Use		
Continuous release.			
Emission Days (days/year):		20	
	t influenced by risk managemen		
	etor:	10	
Local freshwater dilution factorial Local marine water dilution		100	

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Release fraction to air from process (initial release prior to RMM):	2,5E-02	
Release fraction to wastewater from process (initial release prior to 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 discha-	arges, air emis-	
sions and releases to soil	,	
Risk from environmental exposure is driven by freshwater sediment.		
No wastewater treatment required.		
Treat air emission to provide a typical removal efficiency of (%)	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 disposal		
External treatment and disposal of waste should comply with applicable regulations.	local and/or regional	
Conditions and measures related to external recovery of waste		
External recovery and recycling of waste should comply with applicable regulations.	local and/or regional	

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 -Environment

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

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

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

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30000000810	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC10, PROC15 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 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 differently).,	100% (unless stated
Frequency and Duration o	f Use	
Covers daily exposures up t	o 8 hours (unless stated differently).	
Other Operational Condition		•
Assumes use at not more th	an 20°C above ambient temperature (unle	ess stated differently).
Assumes a good basic standard of occupational hygiene is implemented.		
Contributing Scenarios	Risk Management Measures	
Laboratory activitiesPROC15	No other specific measures identified.	
CleaningPROC10	No other specific measures identified.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCE	3.	
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 o	f Use	
Continuous release.		
Emission Days (days/year): 365		365
	influenced by risk management	
Local freshwater dilution fac		10
Local marine water dilution factor: 100		100

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Other Operational Conditions officially Fundamental Fundamental	
Other Operational Conditions affecting Environmental Exposure	T 05 04
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 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 dischasions and releases to soil	arges, air emis-
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	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)	6,8
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 regiona

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

indicated.

Section 3.2 - Environment

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

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

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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: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC13 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		
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Conditio		
	an 20°C above ambient temperature (unless stated differently). ard of occupational hygiene is implemented.	
Contributing Scenarios	Risk Management Measures	
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	T	
Fraction of EU tonnage used in region:	0,1	
Regional use tonnage (tonnes/year):	55	
Fraction of Regional tonnage used locally:	0,54	
Annual site tonnage (tonnes/year):	30	
Maximum daily site tonnage (kg/day):	100	
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):	300	
Environmental factors not influenced by risk management		
Local freshwater dilution factor:	10	
Local marine water dilution factor:	100	
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from process (initial release prior to RMM):	5,0E-02	
Release fraction to wastewater from process (initial release prior to	9,5E-01	
RMM):	,	
Release fraction to soil from process (initial release prior to RMM):	0	
Technical conditions and measures at process level (source) to pro	event release	
Common practices vary across sites thus conservative process re-		
lease estimates used.		
Technical onsite conditions and measures to reduce or limit discha-	arges, air emis-	
sions and releases to soil	3 - 7	
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 >= (%)	00,0	
If discharging to domestic sewage treatment plant, no secondary	34,9	
wastewater treatment required.	0 1,0	
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
Sludge should be incinerated, contained or reclaimed.		
orange orionia se memerateu, comamea er reciamea.		
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	95,8	
(domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following	100	
total wastewater treatment removal (kg/d)	100	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03	
Conditions and Measures related to external treatment of waste for		
External treatment and disposal of waste should comply with applicable local and/or regional		
regulations.	local and/or regional	
Togulations.		
Conditions and measures related to external recovery of waste		
External recovery and recycling of waste should comply with applicable local and/or regional		
regulations.		
Togulations.		

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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SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Water treatment chemicals- Professional	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC13 Environmental Release Categories: ERC8f, ESVOC SpERC 8.22b.v1	
Scope of process	Covers the use of the substance for the treatment of water at industrial facilities in closed or contained systems including incidental exposures during material transfers and equipment cleaning.	

SECTION 2	OPERATIONAL CONDITIONS AND RIS	K MANAGEMENT	
Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure 0.5 - 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	Frequency and Duration of Use		
Covers daily exposures up to	8 hours (unless stated differently).		
Other Operational Conditio	ns affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.			
Contributing Scenarios	Risk Management Measures		
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.		
General exposures (closed systems)PROC3	No other specific measures identified.		
General exposures (open systems)PROC4	No other specific measures identified.		
Pouring from small containersPROC13	No other specific measures identified.		
Equipment maintenance- PROC8a	No other specific measures identified.		
Storage.PROC1PROC2	Store substance within a closed system.		
Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Readily biodegradable.			
Amounts Used			
Fraction of EU tonnage used in region: 0,1		0,1	

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Regional use tonnage (tonnes/year):	25
Fraction of Regional tonnage used locally:	6,0E-02
Annual site tonnage (tonnes/year):	1,5
Maximum daily site tonnage (kg/day):	4,0
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):	1,0E-02
Release fraction to wastewater from wide dispersive use:	9,9E-01
Release fraction to soil from wide dispersive use (regional only):	0
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	,
Risk from environmental exposure is driven by soil.	
If discharging to domestic sewage treatment plant, no secondary	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0,7
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, no secondary	0
wastewater treatment required.	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
•	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	93,6
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	93,6
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	48
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable	
regulations.	J
-	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	Ŭ
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SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
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	EXPOSURE SCENARIO

Section 4.1 - Health

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