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

1.1 Product identifier

Trade name : ShellSol 140/165

Product code : Q5911

Registration number EU : 01-2119471843-32-0001

Synonyms : Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2%

aromatics, ShellSol D25

EC-No. : 927-241-2

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

Use of the Sub- : Industrial Solvent.

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

tered uses under REACH.

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

above without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier : Shell Chemicals Europe B.V.

PO Box 2334

3000 CH Rotterdam

Netherlands

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

Contact for Safety Data : sccmsds@shell.com

Sheet

1.4 Emergency telephone number

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

week)

Giftnotruf (Berlin): +49 (0) 30 3068 6700

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

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

Shell plc.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

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

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

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ways.

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

H336: May cause drowsiness or dizziness.

Long-term (chronic) aquatic hazard, Cat-

egory 3

H412: Harmful to aquatic life with long lasting ef-

fects.

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.

H336 May cause drowsiness or dizziness.

ENVIRONMENTAL HAZARDS:

H412 Harmful to aquatic life with long lasting effects.

Supplemental Hazard

Statements

EUH066

Repeated exposure may cause skin dryness or

cracking.

Precautionary statements : Prevention:

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

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

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

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

P331 Do NOT induce vomiting.

Storage:

No precautionary phrases.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

2.3 Other hazards

The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB.

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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.

Repeated exposure may cause skin dryness or cracking.

SECTION 3: Composition/information on ingredients

3.1 Substances

Components

Chemical name	CAS-No.	Concentration (% w/w)
	EC-No.	
Hydrocarbons, C9-C10, n-	Not Assigned	<= 100
alkanes, isoalkanes, cy-	927-241-2	
clics, < 2% aromatics		

Further information

Contains:

Contains.			1
Chemical	Identification number	Classification	Concentration (% w/w)
name			
n-Hexane	110-54-3, 203-777-	Flam. Liq.2; H225	< 5
	6	Skin Irrit.2; H315	
		Asp. Tox.1; H304	
		STOT RE2; H373	
		STOT SE3; H336	
		Repr.2; H361f	
		Aquatic Chronic2;	
		H411	

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.

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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.

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

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

facility for additional treatment.

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

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

If persistent irritation occurs, obtain medical attention.

If swallowed Call emergency number for your location / facility.

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

4.2 Most important symptoms and effects, both acute and delayed

Symptoms

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

Skin irritation signs and symptoms may include a burning sensation, redness, or swelling.

No specific hazards under normal use conditions. Eye irritation signs and symptoms may include a burning sen-

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

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

congestion, shortness of breath, and/or fever.

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

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

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4.3 Indication of any immediate medical attention and special treatment needed

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

Potential for chemical pneumonitis.

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

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

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

Unsuitable extinguishing

media

Do not use water in a jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

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

A complex mixture of airborne solid and liquid particulates and

gases (smoke). Carbon monoxide.

Unidentified organic and inorganic compounds.

Flammable vapours may be present even at temperatures

below the flash point.

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

distant ignition is possible.

Will float and can be reignited on surface water.

5.3 Advice for firefighters

Special protective equipment :

for firefighters

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

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

Specific extinguishing meth-

ods

Standard procedure for chemical fires.

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

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.

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6.1.1 For non emergency personnel:

Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

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

Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

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

6.2 Environmental precautions

Environmental precautions

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

Monitor area with combustible gas indicator.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up

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

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

safely. Remove contaminated soil and dispose of safely

Ventilate contaminated area thoroughly.

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

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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 storage facilities are followed.

Advice on safe handling

Avoid inhaling vapour and/or mists.

Avoid contact with skin, eyes and clothing.

Extinguish any naked flames. Do not smoke. Remove ignition

sources. Avoid sparks.

Use local exhaust ventilation if there is risk of inhalation of

vapours, mists or aerosols.

Bulk storage tanks should be diked (bunded).

When using do not eat or drink.

The vapour is heavier than air, spreads along the ground and distant ignition is possible.

Product Transfer

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

Refer to guidance under Handling section.

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.

Storage class (TRGS 510) : 3, Flammable liquids

Further information on stor-

age stability

Storage Temperature:

Ambient.

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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, cor-

rosives 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.

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
Dearom. Mineral spirits 140 - 220	Not As- signed		300 mg/m3	DE TRGS 900

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Biological occupational exposure limits

Substance name	CAS-No.	Control parameters	Sampling time	Basis
n-Hexane	110-54-3	2,5-hexanedione plus 4,5-dihydroxy- 2-hexanone: 5 mg/l (Urine)	Immediately after exposure or after working hours	TRGS 903

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

Substance name	End Use	Exposure routes	Potential health effects	Value
ShellSol 140/165 (ShellSol D25)	Workers	Dermal	Long-term systemic effects	208 mg/kg bw/day
ShellSol 140/165 (ShellSol D25)	Workers	Inhalation	Long-term systemic effects	871 mg/m3
ShellSol 140/165 (ShellSol D25)	Consumers	Dermal	Long-term systemic effects	125 mg/kg bw/day
ShellSol 140/165 (ShellSol D25)	Consumers	Inhalation	Long-term systemic effects	185 mg/m3
ShellSol 140/165 (ShellSol D25)	Consumers	Oral	Long-term systemic effects	125 mg/kg bw/day

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

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

8.2 Exposure controls

Engineering measures

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

Use sealed systems as far as possible.

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

Local exhaust ventilation is recommended.

Firewater monitors and deluge systems are recommended.

Eye washes and showers for emergency use.

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

General Information:

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

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Drain down system prior to equipment break-in or maintenance. Retain drain downs in sealed storage pending disposal or subsequent recycle.

Personal protective equipment

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

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

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

protective eyewear is recommended. Approved to EU Standard EN166.

Hand protection

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

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

rubber Nitrile rubber gloves.

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

izer is recommended.

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

For prolonged or repeated exposures use impervious clothing

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.

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Protective clothing approved to EU Standard EN14605.

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

assessment deems it so.

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

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

ratus.

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

priate combination of mask and filter.

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

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : Liquid.

Colour : colourless

Odour : Paraffinic

Odour Threshold : Data not available

Melting point/freezing point : < -30 °C

Boiling point/boiling range : Typical 143 - 160 °C

Flammability

Flammability (solid, gas) : Not applicable

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / : upper flammability limit

upper flammability limit 6 %(V)

Lower explosion limit / : Lower flammability limit

Lower flammability limit 0,8 %(V)

Flash point : Typical 27 °C

Method: IP 170

Auto-ignition temperature : 287 °C

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Method: ASTM E-659

pH : Not applicable

Viscosity

Viscosity, kinematic : Typical 0,91 mm2/s (25 °C)

Method: ASTM D445

Solubility(ies)

Water solubility : immiscible

Partition coefficient: n-

octanol/water

log Pow: estimated value(s) 4 - 5,7

Vapour pressure : Typical 10 hPa (20 °C)

Typical 3 hPa (0 °C)

Typical 30 hPa (50 °C)

Relative density : Data not available

Density : Typical 750 kg/m3 (15 °C)

Method: ASTM D4052

Relative vapour density : 4,6

Particle characteristics

Particle size : Data not available

9.2 Other information

Explosives : Not applicable

Oxidizing properties : Data not available

Evaporation rate : 20

Method: DIN 53170, di-ethyl ether=1

0,56

Method: ASTM D 3539, nBuAc=1

Conductivity : Typical 0,07 pS/m at 20 °C

Method: ASTM D-4308

Low conductivity: < 100 pS/m

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

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

conductive if its conductivity is below 10,000 pS/m., Whether a liquid is nonconductive or semi-conductive, the precautions

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are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives

can greatly influence the conductivity of a liquid

Surface tension : Typical 22,2 mN/m, 20 °C, ASTM D-971

Molecular weight : 130 g/mol

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

Product:

Acute oral toxicity : LD 50 (Rat, male and female): > 5.000 mg/kg

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

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Remarks: Based on available data, the classification criteria

are not met.

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

Remarks: LC50 greater than near-saturated vapour concen-

tration.

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

Acute dermal toxicity LD 50 (Rat, male and female): > 2.000 mg/kg

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

Remarks: Based on available data, the classification criteria

are not met.

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

: LD 50 (Rat, male and female): > 5.000 mg/kg Acute oral toxicity

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

Remarks: Based on available data, the classification criteria

are not met.

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 (Rat, 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

Product:

Species Rabbit

Method Test(s) equivalent or similar to OECD Test Guideline 404 Moderately irritating to skin (but insufficient to classify). Remarks

Prolonged/repeated contact may cause defatting of the skin

which can lead to dermatitis.

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Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Species : Rabbit

Method : Test(s) equivalent or similar to OECD Test Guideline 404 Remarks : Moderately irritating to skin (but insufficient to classify).

Prolonged/repeated contact may cause defatting of the skin

which can lead to dermatitis.

Serious eye damage/eye irritation

Product:

Species : Rabbit

Method : OECD Test Guideline 405

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

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Species : Rabbit

Method : OECD Test Guideline 405

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

Respiratory or skin sensitisation

Product:

Species : Guinea pig

Method : OECD Test Guideline 406

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

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Species : Guinea pig

Method : OECD Test Guideline 406

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

Germ cell mutagenicity

Product:

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

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476

Remarks: Based on available data, the classification criteria

are not met.

Genotoxicity in vivo : Species: Mouse

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

474

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.

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% 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: Mouse

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

474

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:

Species : Rat, male and female

Application Route : Inhalation

Method : Test(s) equivalent or similar to OECD Test Guideline 453
Remarks : Weight of evidence does not support classification as a car-

cinogen

Tumours produced in animals are not considered relevant to

humans.

Not a carcinogen.

Species : Mouse, male and female

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Application Route : Inhalation

Method : Test(s) equivalent or similar to OECD Test Guideline 453
Remarks : Weight of evidence does not support classification as a car-

cinogen

Tumours produced in animals are not considered relevant to

humans.

Not a carcinogen.

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Species : Rat, male and female

Application Route : Inhalation

Method : Test(s) equivalent or similar to OECD Test Guideline 453
Remarks : Weight of evidence does not support classification as a car-

cinogen

Tumours produced in animals are not considered relevant to

humans.

Not a carcinogen.

Species : Mouse, male and female

Application Route : Inhalation

Method : Test(s) equivalent or similar to OECD Test Guideline 453
Remarks : Weight of evidence does not support classification as a car-

cinogen

Tumours produced in animals are not considered relevant to

humans.

Not a carcinogen.

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification
Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics	No carcinogenicity classification.
n-Hexane	No carcinogenicity classification.

Reproductive toxicity

Product:

Effects on fertility : Species: Rat

Sex: male and female Application Route: Oral

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Method: OECD Test Guideline 415

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.

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Effects on fertility : Species: Rat

Sex: male and female Application Route: Oral

Method: OECD Test Guideline 415

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

Product:

Exposure routes : Inhalation

Target Organs : Central nervous system

Remarks : May cause drowsiness or dizziness.

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Exposure routes : Inhalation

Target Organs : Central nervous system

Remarks : May cause drowsiness or dizziness.

STOT - repeated exposure

Product:

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

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

sidered relevant to humans

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

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

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

sidered relevant to humans

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Repeated dose toxicity

Product:

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 413

Target Organs : No specific target organs noted

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

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 413

Target Organs : No specific target organs noted

Aspiration toxicity

Product:

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

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% 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.

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Further information

Product:

Remarks Classifications by other authorities under varying regulatory

frameworks may exist.

Remarks Unless indicated otherwise, the data presented is representa-

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

ponent(s).

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Remarks Classifications by other authorities under varying regulatory

frameworks may exist.

SECTION 12: Ecological information

12.1 Toxicity

Product:

LL50 (Oncorhynchus mykiss (rainbow trout)): > 10 -< 30 mg/l Toxicity to fish

Exposure time: 96 h

Method: OECD Test Guideline 203

Remarks: Harmful

LL/EL/IL50 > 10 <= 100 mg/l

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): 22 - 46 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Remarks: Harmful

LL/EL/IL50 > 10 <= 100 mg/l

EL50 (Pseudokirchneriella subcapitata (algae)): > 1.000 mg/l Toxicity to algae/aquatic plants

Exposure time: 72 h

Method: OECD Test Guideline 201 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

Toxicity to microorganisms

Remarks: Data not available

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Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Toxicity to fish : LL50 (Oncorhynchus mykiss (rainbow trout)): > 10 -< 30 mg/l

Exposure time: 96 h

Method: OECD Test Guideline 203

Remarks: Harmful

LL/EL/IL50 > 10 <= 100 mg/l

Toxicity to daphnia and other :

aquatic invertebrates

EL50 (Daphnia magna (Water flea)): 22 - 46 mg/l

Exposure time: 48 h

Method: OECD Test Guideline 202

Remarks: Harmful

LL/EL/IL50 > 10 <= 100 mg/l

Toxicity to algae/aquatic plants : EL50 (Pseudokirchneriella subcapitata (algae)): > 1.000 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201 Remarks: Practically non toxic: LC/EC/IC50 > 100 mg/l

Toxicity to microorganisms

Remarks: Data not available

Toxicity to fish (Chronic tox-

icity)

Remarks: Data not available

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

Remarks: Data not available

12.2 Persistence and degradability

Product:

Biodegradability : Biodegradation: 89 %

Exposure time: 28 d

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

Oxidises rapidly by photo-chemical reactions in air.

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Biodegradability : Biodegradation: 89 %

Exposure time: 28 d

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

Oxidises rapidly by photo-chemical reactions in air.

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12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Has the potential to bioaccumulate.

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Bioaccumulation : Remarks: Has the potential to bioaccumulate.

12.4 Mobility in soil

Product:

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

particles and will not be mobile.

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

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

particles and will not be mobile.

12.5 Results of PBT and vPvB assessment

Product:

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..

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

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

tence, bioaccumulation and toxicity and hence is not consid-

ered to be PBT or vPvB..

12.6 Endocrine disrupting properties

Product:

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

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

12.7 Other adverse effects

Product:

Additional ecological infor-

mation

Physical properties indicate that substance will rapidly volatilize from aquatic environment and that acute and chronic effects would

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not be observed in practice.

Does not have ozone depletion potential.

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

Components:

Hydrocarbons, C9-C10, n-alkanes, isoalkanes, cyclics, < 2% aromatics:

Additional ecological information

Physical properties indicate that substance will rapidly volatilize from aquatic environment and that acute and chronic effects would not be observed in practice.

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 methods 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

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

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

Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.

Local regulations may be more stringent than regional or national requirements and must be complied with.

MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

Contaminated packaging

Drain container thoroughly.

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

cut or weld uncleaned drums.

Send to drum recoverer or metal reclaimer.

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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.

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)
CDNI Inland Water Waste : NST 8963 Solvent

CDNI Inland Water Waste Agreement

ADR

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

RID

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

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IMDG

Packing group III Labels 3

IATA

: III Packing group : 3 Labels

14.5 Environmental hazards

ADN

Environmentally hazardous : ves

ADR

Environmentally hazardous no

Environmentally hazardous no

IMDG

Marine pollutant no

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 enriched atmospheres displaces available oxygen which may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a confined space

entry.

SECTION 15: Regulatory information

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

REACH - List of substances subject to authorisation

(Annex XIV)

Product is not subject to Authorisa-

tion under REACH.

REACH - Candidate List of Substances of Very High

Concern for Authorisation (Article 59).

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

Article 57).

Water hazard class (Germa:

ny)

WGK 1 slightly hazardous to water

Code Number: 9.166

Remarks: Classification according to AwSV

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Volatile organic compounds : Volatile organic compounds (VOC) content: 100 %

Other regulations:

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

Product is subject Betriebs-Sicherheits-Verordnung (BetrSichV).

Compliance with paragraph 22 of Youth Employment Law.

Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).

Product is subject to Stoerfallverordnung (12. BlmSchV) based on Seveso III directive (2012/18/EU).

The national inventory is based on the CAS number 64742-49-0.

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

DSL : Listed

IECSC : Listed

KECI : Listed

TSCA : Listed

TCSI : Listed

ENCS : Listed

NZIoC : Listed

PICCS : 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

DE TRGS 900 : Germany. TRGS 900 - Occupational exposure limit values.

TRGS 903 : TRGS 903 - Biological limit values

DE TRGS 900 / : AGW = Maximum Workplace Concentration

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; Regula-

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tion (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.

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

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risk arising from contact is solely related to the physicochemical properties of the substance. The risk can therefore be controlled by implementing risk management measures tailored to this specific hazard and included within Section 8 of

the SDS. An exposure scenario is not presented.

Sources of key data used to compile the Safety Data Sheet

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

Classification of the mixture: Classification procedure:

Flam. Liq. 3 H226 On basis of test data.

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

dence determination.

STOT SE 3 H336 Expert judgement and weight of evi-

dence determination.

Aquatic Chronic 3 H412 Expert judgement and weight of evi-

dence determination.

Identified Uses according to the Use Descriptor System

Uses - Worker

Title : Road and construction applications- Professional

Uses - Worker

Title : Use in laboratories- Industrial

Uses - Worker

Title : Use in laboratories- Professional

Uses - Worker

Title : Functional Fluids- Industrial

Uses - Worker

Title : Functional Fluids- Professional

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 as a fuel- Industrial

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Uses - Worker

Title : Use as a fuel- Professional

Uses - Worker

Title : Lubricants- ProfessionalHigh Environmental Release

Uses - Worker

Title : Lubricants- ProfessionalLow Environmental Release

Uses - Worker

Title : Lubricants- Industrial

Uses - Worker

Title : Use in Cleaning Agents- Professional

Uses - Worker

Title : Use in Cleaning Agents- Industrial

Uses - Worker

Title : Uses in Coatings- Professional

Uses - Worker

Title : Uses in Coatings- Industrial

Uses - Worker

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

trial

Uses - Worker

Title : Distribution of substance- Industrial

Uses - Worker

Title : Manufacture of substance- Industrial

Uses - Worker

Title : Rubber production and processing- Industrial

Identified Uses according to the Use Descriptor System

Uses - Consumer

Title : Functional Fluids

- Consumer

Uses - Consumer

Title : Use as a fuel

- Consumer

Uses - Consumer

Title : Lubricants

- Consumer

High Environmental Release

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Uses - Consumer

Title : Lubricants - Consumer

Low Environmental Release

Uses - Consumer

Title : Use in Cleaning Agents

- Consumer

Uses - Consumer

Title : Uses in Coatings

- Consumer

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

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Exposure Scenario - Worker

Exposure Scenario - Worker		
30000000912		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Road and construction applications- Professional	
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, 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 - 10 kPa at STP
Concentration of the Sub-	Covers percentage substance in the product up to 100%.,
stance in Mixture/Article	Unless stated otherwise.,
Frequency and Duration of	Use
Covers daily exposures up to	8 hours (unless stated differently).
Other Operational Conditio	ns affecting Exposure
Assumes use at not more that	n 20°C above ambient temperature (unless stated differently).
Assumes a good basic standa	ard of occupational hygiene is implemented.
Contributing Scenarios	Risk Management Measures
Drum/batch transfersNon-	No other specific measures identified.
dedicated facilityPROC8a	·
Drum/batch transfersDedi-	No other specific measures identified.
cated facilityPROC8b	
Drum/batch transfersDedi-	No other specific measures identified.
cated facilityOperation is	
carried out at elevated tem-	
perature (> 20°C above	
ambient tempera-	
ture).PROC8b	
Small scale weigh-	No other specific measures identified.
ingPROC9	
ManualRolling, Brush-	No other specific measures identified.
ingPROC10	
Spraying/ fogging by ma-	Provide a good standard of controlled ventilation (10 to 15 air
chine applicationOperation	changes per hour).
is carried out at elevated	Avoid carrying out activities involving exposure for more than
temperature (> 20°C above	4 hours
ambient tempera-	Wear suitable gloves tested to EN374.

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ture).PROC11	Other skin protection measures such as face shields may be required during high which are likely to lead to substantial aer spraying.	dispersion activities	
Spraying/ fogging by machine applicationPROC11	Provide a good standard of controlled ve changes per hour). Avoid carrying out activities involving exp 4 hours Wear suitable gloves tested to EN374. Other skin protection measures such as face shields may be required during high which are likely to lead to substantial aer spraying.	oosure for more than impervious suits and dispersion activities	
Dipping, immersion and pouringPROC13	No other specific measures identified.		
Drum and small package fillingPROC9	No other specific measures identified.		
Equipment cleaning and maintenancePROC8a	No other specific measures identified.		
Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB).		
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used	0,1		
Regional use tonnage (tonne		4	
Fraction of Regional tonnage used locally:		5,0E-04	
Annual site tonnage (tonnes/year):		2,0E-03	
Maximum daily site tonnage (kg/day):		5,5E-03	
Frequency and Duration of Use			
Continuous release.			
Emission Days (days/year):		365	
	influenced by risk management		
Local freshwater dilution fact		10	
Local marine water dilution fa	actor:	100	
Other Operational Condition	ons affecting Environmental Exposure		
	vide dispersive use (regional only):	0,95	
Release fraction to wastewater from wide dispersive use:		0,01	
Release fraction to soil from	wide dispersive use (regional only):	0,04	
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-	
Risk from environmental exposure is driven by freshwater.			
No wastewater treatment required.			
Treat air emission to provide a typical removal efficiency of (%) 0			
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)			
If discharging to domestic sewage treatment plant, provide the re-			
siconarging to domocito oc	gooaamon. piani, provido mo io	, ~	

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quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	8,8
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable	local and/or regional
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable regulations.	local and/or regional

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

The ECETOC TRA Version 3 tool has been used to estimate workplace exposures unless otherwise indicated

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

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 measures.

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

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

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

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Exposure Scenario - Worker

Expodure decinario 11	Exposure occitatio - Worker	
30000000920		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Use in laboratories- Industrial	
Use Descriptor	Sector of Use: SU3 Process Categories: 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	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
Frequency and Duration of	Use	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Condition	ns affecting Exposure	
Assumes a good basic standa	n 20°C above ambient temperature (unle ard of occupational hygiene is implemente	
Contributing Scenarios	Risk Management Measures	
Laboratory activi- tiesPROC15	No other specific measures identified.	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	0,01
Fraction of Regional tonnage	used locally:	1
Annual site tonnage (tonnes/	year):	0,01
Maximum daily site tonnage (kg/day):		0,5
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		20
Environmental factors not i	nfluenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
	ns affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):		0,025
Release fraction to wastewater from process (initial release prior to RMM):		0,02

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Release fraction to soil from process (initial release prior to RMM):	1E-04
Technical conditions and measures at process level (source) to pro-	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	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, provide the required onsite wastewater removal efficiency of (%)	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 (%)	96,4
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,4
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	230
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 regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable regulations.	local and/or regiona

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

outer wide 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		
· ·	are not expected to exceed the DN(M)EL when the Risk Management al Conditions outlined in Section 2 are implemented.	

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

Section 4.2 -Environment

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

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

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

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Exposure Scenario - Worker

30000000921	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in laboratories- Professional
Use Descriptor	Sector of Use: SU22 Process Categories: 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.

OF OTION O	ODERATIONAL CONDITIONS AND DIS	OK MANA OFMENT
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 Sub-	Covers percentage substance in the product up to 100%.,	
stance in Mixture/Article	Unless stated otherwise.,	
Frequency and Duration of	Use	
	8 hours (unless stated differently).	
Other Operational Condition		
	n 20°C above ambient temperature (unles	
Assumes a good basic standa	ard of occupational hygiene is implemente	ed.
Contributing Scenarios	Risk Management Measures	
Laboratory activi-	No other specific measures identified.	
tiesPROC15	•	
Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonnes/year): 0,01		0,01
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/		5,0E-06
Maximum daily site tonnage (1,4E-05
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year): 365		365
Environmental factors not influenced by risk management		
Local freshwater dilution factor: 10		
Local marine water dilution factor: 100		100
	ns affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only): 0,5		,
Release fraction to wastewater from wide dispersive use: 0,5		

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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 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, provide the required onsite wastewater removal efficiency of (%)	0
Organisational measures to prevent/limit release from site	I
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 (%)	96,4
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,4
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	2,2E-03
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.	3
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional

SECTION 3	EXPOSURE ESTIMATION	
Section 3.1 - Health		
The ECETOC TRA Version 3 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.		

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

Exposure Scenario - Worker		
30000000904		
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.	

CECTION 2	ODED ATIONAL CONDITIONS AND DISK MANAGEMENT	
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 percentage substance in the product up to 100%., Unless stated otherwise.,	
Frequency and Duration of	Use	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Condition	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-	No other specific measures identified.	
cles/equipment(closed systems)PROC9		
Filling/ preparation of	No other specific measures identified.	
equipment from drums or		
containers.Non-dedicated		
facilityPROC8a		
General exposures (closed	No other specific measures identified.	
systems)PROC2PROC3		
General exposures (open	No other specific measures identified.	
systems)PROC4		
General exposures (open	No other specific measures identified.	
systems)elevated tempera-		
turePROC4		
Remanufacture of reject	No other specific measures identified.	

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autial a a DDOOO		
articlesPROC9	No other energia 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.		
Amounts Used		•
Fraction of EU tonnage used	in region:	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		1 000
Continuous release.		
Emission Days (days/year):		20
	influenced by risk management	20
Local freshwater dilution fact		10
Local marine water dilution fa		100
	ns affecting Environmental Exposure	100
	rocess (initial release prior to RMM):	5,0E-03
	er from process (initial release prior to	1,0E-06
RMM):	er from process (initial release prior to	1,02-00
Release fraction to soil from	process (initial release prior to RMM):	1,0E-03
Technical conditions and n	neasures at process level (source) to pro	event release
	ss sites thus conservative process re-	
lease estimates used.		
Technical onsite conditions sions and releases to soil	s and measures to reduce or limit disch	arges, air emis-
	osure is driven by freshwater.	
Prevent discharge of undissolved substance to or recover from onsite		
wastewater.	ived substance to or recover from enale	
wastewater. No wastewater treatment red		
No wastewater treatment req	uired.	0
No wastewater treatment req Treat air emission to provide	uired. a typical removal efficiency of (%)	0
No wastewater treatment req Treat air emission to provide Treat onsite wastewater (price	uired. a typical removal efficiency of (%) r to receiving water discharge) to provide	0 0
No wastewater treatment req Treat air emission to provide Treat onsite wastewater (prio the required removal efficiency	uired. a typical removal efficiency of (%) r to receiving water discharge) to provide cy of >= (%)	0
No wastewater treatment req Treat air emission to provide Treat onsite wastewater (prio the required removal efficient If discharging to domestic se	uired. a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, provide the re-	
No wastewater treatment req Treat air emission to provide Treat onsite wastewater (prior the required removal efficient If discharging to domestic se quired onsite wastewater rem	uired. a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, provide the re- noval efficiency of (%)	0
No wastewater treatment req Treat air emission to provide Treat onsite wastewater (prior the required removal efficient If discharging to domestic se quired onsite wastewater rem	uired. a typical removal efficiency of (%) or to receiving water discharge) to provide cy of >= (%) wage treatment plant, provide the re- noval efficiency of (%) or prevent/limit release from site	0
No wastewater treatment req Treat air emission to provide Treat onsite wastewater (prior the required removal efficiency If discharging to domestic se quired onsite wastewater rem Organisational measures to	uired. a typical removal efficiency of (%) r to receiving water discharge) to provide cy of >= (%) wage treatment plant, provide the re- noval efficiency of (%) p prevent/limit release from site e to natural soils.	0
No wastewater treatment req Treat air emission to provide Treat onsite wastewater (prio the required removal efficient If discharging to domestic se quired onsite wastewater rem Organisational measures to Do not apply industrial sludge Sludge should be incinerated	uired. a typical removal efficiency of (%) or to receiving water discharge) to provide by of >= (%) wage treatment plant, provide the removal efficiency of (%) or prevent/limit release from site e to natural soils. I, contained or reclaimed.	0
No wastewater treatment req Treat air emission to provide Treat onsite wastewater (prio the required removal efficient If discharging to domestic se quired onsite wastewater rem Organisational measures to Do not apply industrial sludge Sludge should be incinerated	uired. a typical removal efficiency of (%) r to receiving water discharge) to provide cy of >= (%) wage treatment plant, provide the re- noval efficiency of (%) prevent/limit release from site e to natural soils. contained or reclaimed. elated to municipal sewage treatment p	0 0
No wastewater treatment req Treat air emission to provide Treat onsite wastewater (prio the required removal efficient If discharging to domestic se- quired onsite wastewater rem Organisational measures to Do not apply industrial sludge Sludge should be incinerated Conditions and Measures restinated substance removal	uired. a typical removal efficiency of (%) or to receiving water discharge) to provide by of >= (%) wage treatment plant, provide the removal efficiency of (%) or prevent/limit release from site e to natural soils. I, contained or reclaimed.	0
No wastewater treatment req Treat air emission to provide Treat onsite wastewater (prio the required removal efficiency If discharging to domestic se quired onsite wastewater rem Organisational measures to Do not apply industrial sludge Sludge should be incinerated Conditions and Measures restimated substance removal treatment (%)	uired. a typical removal efficiency of (%) r to receiving water discharge) to provide cy of >= (%) wage treatment plant, provide the re- noval efficiency of (%) o prevent/limit release from site e to natural soils. contained or reclaimed. elated to municipal sewage treatment p I from wastewater via domestic sewage	0 0 lant 96,4
No wastewater treatment req Treat air emission to provide Treat onsite wastewater (prio the required removal efficiency If discharging to domestic se quired onsite wastewater rem Organisational measures to Do not apply industrial sludge Sludge should be incinerated Conditions and Measures restimated substance removal treatment (%)	uired. a typical removal efficiency of (%) r to receiving water discharge) to provide cy of >= (%) wage treatment plant, provide the re- noval efficiency of (%) prevent/limit release from site e to natural soils. contained or reclaimed. elated to municipal sewage treatment p I from wastewater via domestic sewage om wastewater after onsite and offsite	0 0
No wastewater treatment req Treat air emission to provide Treat onsite wastewater (prio the required removal efficiency If discharging to domestic se quired onsite wastewater rem Organisational measures to Do not apply industrial sludge Sludge should be incinerated Conditions and Measures r Estimated substance removal treatment (%) Total efficiency of removal fro (domestic treatment plant) R	uired. a typical removal efficiency of (%) or to receiving water discharge) to provide by of >= (%) wage treatment plant, provide the removal efficiency of (%) or prevent/limit release from site to natural soils. I, contained or reclaimed. elated to municipal sewage treatment pul from wastewater via domestic sewage or wastewater after onsite and offsite MMs (%) age (MSafe) based on release following	0 0 0 lant 96,4

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Assumed domestic sewage treatment plant flow (m3/d) 2.00

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

The ECETOC TRA Version 3 tool has been used to estimate workplace exposures unless otherwise indicated

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

30000000905	
30000000000	
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
	20 VOO OPERO 3.138.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 - 10 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,		
Frequency and Duration of Use			
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Conditions affecting Exposure			
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.			

Contributing Scenarios	Risk Management Measures	
Drum/batch transfersPROC8a	No other specific measures identified.	
Transfer from/pouring from cotainersPROC9	No other specific measures identified.	
Filling/ preparation of equipment from drums or containers.PROC9	No other specific measures identified.	
General exposures (closed systems)PROC1PROC2PRO	No other specific measures identified.	
Operation of equipment containg engine oils and similar.(closed systems)PROC20	No other specific measures identified.	
Operation of equipment containg engine oils and similar.(closed systems)Operation carried out at elevated tempe ture (> 20°C above ambient temperature).PROC20	is	
Remanufacture of reject arti-	No other specific measures identified.	

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clesPROC9	I	
Equipment maintenance-	No other specific measures identified	4
PROC8a	No other specific measures identified.	
Storage.PROC1PROC2	Store substance within a closed system.	
Section 2.2 Co	ntrol of Environmental Exposure	
Substance is complex UVCB.	•	
Predominantly hydrophobic.		
Amounts Used		•
Fraction of EU tonnage used in re	egion:	0,1
Regional use tonnage (tonnes/yea		10
Fraction of Regional tonnage use		5,0E-04
Annual site tonnage (tonnes/year)		5,0E-03
Maximum daily site tonnage (kg/d		0,014
Frequency and Duration of Use		
Continuous release.		
Emission Days (days/year):		365
Environmental factors not influ	enced by risk management	300
Local freshwater dilution factor:	checa by hisk management	10
Local marine water dilution factor	•	100
	ffecting Environmental Exposure	100
Release fraction to air from wide		0,05
Release fraction to wastewater from		0,025
Release fraction to soil from wide		0,025
	ures at process level (source) to pr	
Common practices vary across si		event release
lease estimates used.	tes thus conservative process re-	
Technical onsite conditions and	d measures to reduce or limit disch	arges, air emis-
sions and releases to soil Risk from environmental exposure	o is driven by freehwater	
No wastewater treatment required		
Treat air emission to provide a typ		0
		0
Treat onsite wastewater (prior to receiving water discharge) to provide		0
the required removal efficiency of If discharging to domestic sewage		0
	· · · · · · · · · · · · · · · · · · ·	0
quired onsite wastewater removal	vent/limit release from site	
Organisational measures to pre		
Do not apply industrial sludge to r	naturai soiis.	
Sludge should be incinerated, cor	ntained or reclaimed.	
	ed to municipal sewage treatment p	
Estimated substance removal from treatment (%)	m wastewater via domestic sewage	96,4
Total efficiency of removal from w	vastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs	•	
Maximum allowable site tonnage (MSafe) based on release following		20
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)		2.000
Conditions and Measures relate	ed to external treatment of waste fo	
	of waste should comply with applicable	

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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 Version 3 tool has been used to estimate workplace exposures unless otherwise indicated

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

30000000894	
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 - 10 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,		
Frequency and Duration of Use			
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Conditions affecting Exposure			
Assumes use at not more than 20°C above ambient temperature (unless stated differently).			

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

Contributing Scenarios	Risk Management Measures
General exposures (closed sy tems)PROC1PROC2PROC3	, , , , , , , , , , , , , , , , , , , ,
General exposures (open systems)PROC4	No other specific measures identified.
Bulk transfersDedicated facili tyPROC8b	No other specific measures identified.
Filling/ preparation of equipm from drums or containers.PROC5PROC8bPROC9	nent No other specific measures identified.
Process samplingPROC8b	No other specific measures identified.
Metal machining operationsPROC17	No other specific measures identified.
Treatment by dipping and pour ingPROC13	ur- No other specific measures identified.

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SprayingPROC7	Provide a good standard of controlled ventilation (10 to 15 air changes per hour).
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	No other specific measures identified.
Equipment cleaning and mainte- nanceDedicated facilityPROC8b	No other specific measures identified.
Equipment cleaning and mainte- nanceNon-dedicated facili- tyPROC8a	No other specific measures identified.
Storage.PROC1PROC2	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	_
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used in region: 0,1		
Regional use tonnage (tonnes		1
Fraction of Regional tonnage	used locally:	1
Annual site tonnage (tonnes/y	/ear):	1
Maximum daily site tonnage (kg/day):	50
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		20
Environmental factors not i	nfluenced by risk management	_
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from pr	2,0E-02	
Release fraction to wastewater from process (initial release prior to		1,0E-06
RMM):		
Release fraction to soil from process (initial release prior to RMM): 0		J
	easures at process level (source) to p	revent release
l	ss sites thus conservative process re-	
lease estimates used.		
	and measures to reduce or limit disc	harges, air emis-
sions and releases to soil		
Risk from environmental expo		
Prevent discharge of undissolved substance to or recover from onsite wastewater.		

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No wastewater treatment required.		
Treat air emission to provide a typical removal efficiency of (%)	70	
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	0	
If discharging to domestic sewage treatment plant, provide the re-		
quired onsite wastewater removal efficiency of (%)		
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures related to municipal sewage treatment p	lant	
Estimated substance removal from wastewater via domestic sewage	96,4	
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,4	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	8,0E+04	
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 regulations.	local and/or regional	

SECTION 3	EXPOSURE ESTIMATION
SECTION 3	

Section 3.1 - Health

The ECETOC TRA Version 3 tool has been used to estimate workplace exposures unless otherwise indicated

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

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

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

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

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

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Exposure Scenario - Worker

Exposure Scenario - Worker		
30000000895		
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, ERC8d, ESVOC SpERC 8.7c.v1	
Scope of process	Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/ reject articles, and disposal of waste oils.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Worker Exposure		
Product Characteristics			
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,		
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).			
Annuaria a mandili an'i atao dandaf annuatina di bunina i bunina di bandan antad			

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios Risk Management Measures		nent Measures
General exposures (closed systems)PROC1PROC2PROC3		No other specific measures identified.
Bulk transfersPROC8b		No other specific measures identified.
Filling/ preparation of equipment from drums or contain- ers.PROC5PROC8aPROC8bPROC9		No other specific measures identified.
Process samplingPROC8b		No other specific measures identified.
Metal machining operationsPROC17		Provide a good standard of controlled ventilation (10 to 15 air changes per hour).
ManualRolling, BrushingPROC10		No other specific measures identified.
SprayingIndoorPROC11		Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

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Substance is complex UVCB. Predominantly hydrophobic.		
Section 2.2	Control of En	vironmental Exposure
Storage.PROC1PROC2		Store substance within a closed system.
Equipment cleaning and maintenanceDedicated facilityPROC8b		No other specific measures identified.
Equipment cleaning and maintenanceNon-dedicated facilityPROC8a		No other specific measures identified.
Treatment by dipping and pouringPROC13		No other specific measures identified.
SprayingOutdoorPROC11		Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure fo more than 1 hour. Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
		Avoid carrying out activities involving exposure for more than 4 hours Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne	s/year):	0,5	
Fraction of Regional tonnage	used locally:	5,0E-04	
Annual site tonnage (tonnes/	year):	2,5E-04	
Maximum daily site tonnage ((kg/day):	6,8E-04	
Frequency and Duration of			
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not i	influenced by risk management		
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	
Other Operational Conditions affecting Environmental Exposure			
Release fraction to air from wide dispersive use (regional only):		0,15	
Release fraction to wastewate	er from wide dispersive use:	0,05	
Release fraction to soil from	wide dispersive use (regional only):	0,05	
Technical conditions and measures at process level (source) to prevent release			
Common practices vary across sites thus conservative process re-			
lease estimates used.			
Technical onsite conditions and measures to reduce or limit discharges, air emis-			
sions and releases to soil			
Risk from environmental exposure is driven by freshwater.			
No wastewater treatment required.			

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_		
Treat air emission to provide a typical removal efficiency of (%)	0	
	ļ -	
Treat onsite wastewater (prior to receiving water discharge) to provide	0	
the required removal efficiency of >= (%)		
If discharging to domestic sewage treatment plant, provide the re-	0	
quired onsite wastewater removal efficiency of (%)		
Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.		
3		
Sludge should be incinerated, contained or reclaimed.		
Clauge chedia so memorated, contamed of reclaimed		
Conditions and Measures related to municipal sewage treatment p	lant	
Estimated substance removal from wastewater via domestic sewage	96.4	
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite	96,4	
(domestic treatment plant) RMMs (%)	,	
Maximum allowable site tonnage (MSafe) based on release following	2,2	
total wastewater treatment removal (kg/d)	_,_	
Assumed domestic sewage treatment plant flow (m3/d)	2.000	
Conditions and Measures related to external treatment of waste for disposal		
External treatment and disposal of waste should comply with applicable		
regulations.	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 Version 3 tool has been used to estimate workplace exposures unless otherwise indicated

Estimated workplace exposures are not expected to exceed DNELs when the identified risk management measures are adopted.

Section 3.2 -Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO
Continu 4.4 Houlth	

Section 4.1 - Health

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

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

Section 4.2 - Environment

Guidance is based on assumed operating conditions which may not be applicable to all

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sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

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

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

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Exposure Scenario - Worker

20000000000	
30000000899	
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, PROC8a, PROC8b, PROC10, PROC13, PROC14
	Environmental Release Categories: ERC4, ESVOC SpERC
	4.10a.v1
	4.104.71
Soons of process	Covers the use as hinders and release agents including me
Scope of process	Covers the use as binders and release agents including ma-
	terial transfers, mixing, application (including spraying and
	brushing), mould forming and casting, 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 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
Frequency and Duration of	Use	
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Contributing Scenarios	Risk Management Measures
Material transfersUse in contained systemsPROC1PROC2PROC3	No other specific measures identified.
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.
Mixing operations (closed systems)PROC3	No other specific measures identified.
Mixing operations (open systems)PROC4	No other specific measures identified.
Mold formingPROC14	No other specific measures identified.
Casting operations(open systems)Operation is carried out a elevated temperature (> 20°C above ambient temperature). Aerosol generation due to elevated process temperature-PROC6	
SprayingMachinePROC7	Provide a good standard of controlled ventilation (10 to 15 air

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changes per hour).

ManualRolling, Brush- ingPROC10	No other specific measures identified	-	
Dipping, immersion and pour-	No other specific measures identified		
ingPROC13	·		
Equipment cleaning and	No other specific measures identified	•	
maintenancePROC8a			
Storage.PROC1PROC2	Store substance within a closed syste	em.	
-	ontrol of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used in		0,1	
Regional use tonnage (tonnes/y		43	
Fraction of Regional tonnage us		1	
Annual site tonnage (tonnes/yea		43	
Maximum daily site tonnage (kg		2,200	
Frequency and Duration of Us	se .		
Continuous release.			
Emission Days (days/year):		20	
Environmental factors not infl	Environmental factors not influenced by risk management		
Local freshwater dilution factor:		10	
Local marine water dilution factor	or:	100	
Other Operational Conditions	affecting Environmental Exposure		
Release fraction to air from process (initial release prior to RMM): 0,2			
Release fraction to wastewater from process (initial release prior to RMM): 1,0E-07			
Release fraction to soil from process (initial release prior to RMM):			
Technical conditions and measures at process level (source) to prevent release			
Common practices vary across sites thus conservative process re-			
lease estimates used.			
Technical onsite conditions a sions and releases to soil	nd measures to reduce or limit disch	arges, air emis-	
	re is driven by freshwater		
Risk from environmental exposure is driven by freshwater. Prevent discharge of undissolved substance to or recover from onsite			
wastewater.			
No wastewater treatment required.			
Treat air emission to provide a typical removal efficiency of (%)		80	
Treat onsite wastewater (prior to receiving water discharge) to provide		0	
the required removal efficiency of >= (%)			
If discharging to domestic sewage treatment plant, provide the re-		0	
quired onsite wastewater removal efficiency of (%)			
	Organisational measures to prevent/limit release from site		
Do not apply industrial sludge to natural soils.			
Sludge should be incinerated, co	Sludge should be incinerated, contained or reclaimed.		
Conditions and Measures rela	Conditions and Measures related to municipal sewage treatment plant		
	om wastewater via domestic sewage	96,4	
		,	

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treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	3,3E+06
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000

Conditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/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 Version 3 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 Scenario - Worker

30000000900		
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 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
Frequency and Duration o	Use	
Covers daily exposures up to	o 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.		

Assumes a good basic standard of occupational hygiene is implemented.	
Contributing Scenarios	Risk Management Measures
Material transfers(closed systems)PROC1PROC2PROC3	No other specific measures identified.
Drum/batch 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 a elevated temperature (> 20°C above ambient temperature).PROC6	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.

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SprayingMachinePROC11	Provide a good standard of controlle	d ventilation (10 to 15 a		
1 1, 3	changes per hour).			
	Avoid carrying out activities involving	exposure for more tha		
	4 hours	•		
	Wear suitable gloves tested to EN37			
	Other skin protection measures such			
	face shields may be required during			
	which are likely to lead to substantia	l aerosol release, e.g.		
	spraying.			
ManualRolling, Brush-	No other specific measures identified	d.		
ingPROC10 Storage.PROC1PROC2	Store substance within a closed syst	om		
Sidiage.PROCTPROC2	Store substance within a closed syst	em.		
Section 2.2	Control of Environmental Exposure			
Substance is complex UVCB.				
Predominantly hydrophobic.				
Amounts Used				
Fraction of EU tonnage used i		0,1		
Regional use tonnage (tonnes		20		
Fraction of Regional tonnage		5,0E-04		
Annual site tonnage (tonnes/y		0,01		
Maximum daily site tonnage (0,027		
Frequency and Duration of	Use			
Continuous release.				
Emission Days (days/year):	365			
	nfluenced by risk management	1		
Local freshwater dilution factor		10		
Local marine water dilution fa		100		
	ns affecting Environmental Exposure	1		
	de dispersive use (regional only):	0,95		
Release fraction to wastewate		0,025		
Release fraction to soil from wide dispersive use (regional only): 0,025 Technical conditions and measures at process level (source) to prevent release				
		event release		
	s sites thus conservative process re-			
lease estimates used.	and measures to reduce or limit disch	arge air emis-		
sions and releases to soil	and measures to reduce or mint discir	arges, an emis-		
Risk from environmental expo	sure is driven by freshwater.			
No wastewater treatment required.				
Treat air emission to provide a	0			
Treat onsite wastewater (prior to receiving water discharge) to provide 0				
the required removal efficiency of >= (%)				
	age treatment plant, provide the re-	0		
quired onsite wastewater rem				
	prevent/limit release from site			
Do not apply industrial sludge	to natural soils.			
Sludge should be incinerated	contained or reclaimed.			
	oornamou or robialitiou.			

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Conditions and Measures related to municipal sewage treatment plant				
Estimated substance removal from wastewater via domestic sewage	96,4			
treatment (%)				
Total efficiency of removal from wastewater after onsite and offsite	96,4			
(domestic treatment plant) RMMs (%)				
Maximum allowable site tonnage (MSafe) based on release following	37			
total wastewater treatment removal (kg/d)				
Assumed domestic sewage treatment plant flow (m3/d)	2.000			

Conditions and Measures related to external treatment of waste for disposal

External treatment and disposal of waste should comply with applicable local and/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 Version 3 tool has been used to estimate workplace exposures unless				

otherwise indicated

Section 3.2 - Environment

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

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

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

Exposure occitano - Worker		
30000000901		
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 ac		
	ties 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 - 10 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,		
Frequency and Duration of Use			
Covers daily exposures up to	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.			

Co	ontributing Scenarios	Ris	sk Management Measures	
_	ulk transfersDedicated facili- PROC8b	-	No other specific measures identified.	
	um/batch transfersDedicate cilityPROC8b	ed	No other specific measures identified.	
	eneral exposures (closed stems)PROC1PROC2PRO	СЗ	No other specific measures identified.	
	se as a fuel(closed sys- ms)PROC16		No other specific measures identified.	
	quipment cleaning and aintenancePROC8a		No other specific measures identified.	
Sto	orage.PROC1PROC2		Store substance within a closed system.	

Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonnes	s/year):	30	
Fraction of Regional tonnage used locally:			

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Annual site tonnage (tonnes/year):	30				
	1.500				
Maximum daily site tonnage (kg/day): Frequency and Duration of Use	1.500				
Continuous release.					
	20				
Emission Days (days/year): Environmental factors not influenced by risk management	20				
Local freshwater dilution factor:	10				
Local marine water dilution factor:	100				
Other Operational Conditions affecting Environmental Exposure	100				
	E 0E 02				
Release fraction to air from process (initial release prior to RMM):	5,0E-03				
Release fraction to wastewater from process (initial release prior to RMM):	1,0E-05				
Release fraction to soil from process (initial release prior to RMM):	0				
Technical conditions and measures at process level (source) to pro-	event release				
Common practices vary across sites thus conservative process release estimates used.					
Technical onsite conditions and measures to reduce or limit dischasions and releases to soil	arges, air emis-				
Risk from environmental exposure is driven by freshwater sediment.					
No wastewater treatment required.					
Treat air emission to provide a typical removal efficiency of (%)	95				
Treat onsite wastewater (prior to receiving water discharge) to provide	0				
the required removal efficiency of >= (%)					
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%)	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 (%)	96,4				
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,4				
Maximum allowable site tonnage (MSafe) based on release following	4,6E+05				
total wastewater treatment removal (kg/d)	1,02100				
Assumed domestic sewage treatment plant flow (m3/d)	2.000				
Conditions and Measures related to external treatment of waste for disposal					
Combustion emissions limited by required exhaust emission controls.	a.opoou.				
Waste combustion emissions considered in regional exposure assessment.					
Conditions and measures related to external recovery of waste					
	This substance is consumed during use and no waste of substance is generated.				

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

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Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 -Environment

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

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

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

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Exposure Scenario - Worker

Exposure Scenario - Worker	
30000000902	
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 MEASURES	MANAGEMENT
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STF	0
Concentration of the Substance in Mixture/Article	Covers percentage substance in the produc Unless stated otherwise.,	ot up to 100%.,
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.		

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios Risk Management Measures

Contributing Scenarios R	lisk Management Measures
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.
Refueling.Dedicated facili- tyPROC8b	No other specific measures identified.
General exposures (closed systems)PROC1PROC2PROC3	No other specific measures identified.
Use as a fuel(closed systems)PROC16	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Storage.PROC1	Store substance within a closed system.

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

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r	T
Regional use tonnage (tonnes/year):	30
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	0,015
Maximum daily site tonnage (kg/day):	0,041
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-03
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 discharge	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	67
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	r disposal
Combustion emissions limited by required exhaust emission controls.	
Waste combustion emissions considered in regional exposure assessm	ent.
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is g	enerated
This substance is consumed during use and no waste of substance is g	ธาเธาสเธน.

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

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otherwise indicated

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

30000000893	
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 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
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 M	anagement 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 sys tems)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 equipme from drums or containers.Nor dedicated facilityPROC8a		No other specific measures identified.
Operation and lubrication of henergy open equipmentIndoorPROC17PROC18	igh	Provide a good standard of controlled ventilation (10 to 15 air changes per hour).

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Operation and lubrication of high energy open equipmentOut-doorPROC17PROC18	Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours
Maintenance (of larger plant items) and machine set upPROC8b	No other specific measures identified.
Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature). Dedicated facilityPROC8b	No other specific measures identified.
Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).Non-dedicated facilityPROC8a	No other specific measures identified.
Engine lubricant servicePROC9	No other specific measures identified.
ManualRolling, BrushingPROC10	No other specific measures identified.
SprayingPROC11	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
Treatment by dipping and pour-ingPROC13	No other specific measures identified.
Storage.PROC1	Store substance within a closed system.
	ol of Environmental Exposure
Substance is complex UVCB.	
Predominantly hydrophobic.	
Amounts Used	
Fraction of EU tonnage used in region	
Regional use tonnage (tonnes/year):	26
Fraction of Regional tonnage used lo	
Annual site tonnage (tonnes/year):	0,013
Maximum daily site tonnage (kg/day)	: 0,035
Frequency and Duration of Use	
Continuous release.	205
Emission Days (days/year):	365
Environmental factors not influence	,
Local freshwater dilution factor:	10
Local marine water dilution factor:	ting Environmental Exposure
Other Operational Conditions affect	
Release fraction to air from wide disp	persive use (regional only): 0,15

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Release fraction to wastewater from wide dispersive use:	0,05
Release fraction to soil from wide dispersive use (regional only):	0,05
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	1
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	
Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	52
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	
External treatment and disposal of waste should comply with applicable	e local and/or regiona
regulations.	
On ditions and management also external management	
Conditions and measures related to external recovery of waste	land and/an and the
External recovery and recycling of waste should comply with applicable	local and/or regiona
regulations.	

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

Section 3.2 - Environment

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

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

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Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

dedicated facilityPROC8a

doorPROC17PROC18

Operation and lubrication of high energy open equipmentIn-

Exposure Scenario - Worke			
30000000892			
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 9.6b.v1		
Scope of process	Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil.		

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES			
Section 2.1	Control of Worker Exposure			
Product Characteristics				
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP			
Concentration of the Sub- stance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,			
Frequency and Duration o				
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 sys-No other specific measures identified. tems)PROC1PROC2PROC3 Operation of equipment containing No other specific measures identified. engine oils and similar.PROC20 General exposures (open sys-No other specific measures identified. tems)PROC4 Bulk transfersDedicated facili-No other specific measures identified. tyPROC8b Filling/ preparation of equipment No other specific measures identified. from drums or containers.Dedicated facilityPROC8b Filling/ preparation of equipment No other specific measures identified. from drums or containers. Non-

air changes per hour).

Provide a good standard of controlled ventilation (10 to 15

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Operation and lubrication of high energy open equipmentOut-doorPROC17		Ensure operation is undertaken outdoors. Avoid carrying out activities involving exposure for more than 4 hours		
Maintenance (of larger plant items) and machine set upPROC8b		No other specific measures identified.		
Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature). Dedicated facilityPROC8b		No other specific measures ident	ified.	
Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).Non-dedicated facilityPROC8a		No other specific measures identified.		
Éngine lubricant servicePRO	C9	No other specific measures identified.		
ManualRolling, BrushingPROC10		No other specific measures identified.		
SprayingPROC11		Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.		
Treatment by dipping and pouringPROC13		No other specific measures identified.		
Storage.PROC1PROC2		Store substance within a closed system.		
Section 2.2	Conti	rol of Environmental Exposure		
Substance is complex UVCB.		P		
Predominantly hydrophobic.				
Amounts Used				
Fraction of EU tonnage used	in regio	on:	0,1	
Regional use tonnage (tonnes/year):			26	
Fraction of Regional tonnage used to			5,0E-04	
Annual site tonnage (tonnes/year):			0,013	
Maximum daily site tonnage (kg/day)):	0,035	
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 fa	ctor:		100	
Other Operational Conditions affecting Environmental Exposure				
-				

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Release fraction to air from wide dispersive use (regional only):	0,01
Release fraction to wastewater from wide dispersive use:	0,01
Release fraction to soil from wide dispersive use (regional only):	0,01
Technical conditions and measures at process level (source) to pro	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit discha-	arges, air emis-
sions and releases to soil	_
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage treatment (%)	96,4
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,4
Maximum allowable site tonnage (MSafe) based on release following	52
total wastewater treatment removal (kg/d)	2.000
Assumed domestic sewage treatment plant flow (m3/d)	
Conditions and Measures related to external treatment of waste for	
External treatment and disposal of waste should comply with applicable	local and/or regiona
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regiona
regulations.	

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECETOC TRA Version 3 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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Exposure Scenario - Worker

300000000891	
30000000031	
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 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,
Frequency and Duration o	
Covers daily exposures up to	o 8 hours (unless stated differently).
Other Operational Condition	ons affecting Exposure
	an 20°C above ambient temperature. dard of occupational hygiene is implemented.

Contributing Scenarios Risk Management Measures General exposures (closed No other specific measures identified. systems)PROC1PROC2PROC3 General exposures (open sys-No other specific measures identified. tems)PROC4 Bulk transfersDedicated facili-No other specific measures identified. tyPROC8b Filling/ preparation of equipment No other specific measures identified. from drums or containers. Nondedicated facilityPROC8a Filling/ preparation of equipment No other specific measures identified. from drums or containers.Dedicated facilityPROC8b Initial factory fill of equip-No other specific measures identified. mentPROC9 Operation and lubrication of No other specific measures identified. high energy open equipmentPROC17PROC18

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ManualKolling, Brish- ingPROC10	Marcal Dall's a David	I No. 10 and 10	
IngPROC13		No other specific measures identifie	
changes per hour). Maintenance (of larger plant items) and machine set up-PROC8b Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC8b Maintenance of small itemsNon-dedicated facilityPROC8a Remanufacture of reject articlesPROC9 Storage.PROC1PROC2 Storage.PROC1PROC2 Storage.PROC1PROC2 Store substance within a closed system. Section 2.2 Control of Environmental Exposure Substance is complex UVCB. Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year): Section and use tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Local marine water dilution factor: Local freshwater dilution factor: Local freshwater dilution factor: Local freshwater dilution factor: Release fraction to air from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater treatment required.		r- No other specific measures identifie	d.
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Section 2.2 Control of Environmental Exposure Substance is complex UVCB. Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: 0,1 Regional use tonnage (tonnes/year): 52 Fraction of Regional tonnage used locally: 1 Annual site tonnage (tonnes/year): 52 Maximum daily site tonnage (tonnes/year): 52 Maximum daily site tonnage (tonnes/year): 2.600 Frequency and Duration of Use Continuous release. Emission Days (days/year): 20 Environmental factors not influenced by risk management Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): 1,5E-03 Release fraction to wastewater from process (initial release prior to RMM): 1,0E-06 RMM): Release fraction to soil from process (initial release prior to RMM): 1,0E-03 Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater treatment required.	Remanufacture of reject arti-	No other specific measures identifie	d.
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Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): 1,0E-06 RMM): Release fraction to soil from process (initial release prior to RMM): 1,0E-03 Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater treatment required.	Frequency and Duration of U	Jse	
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Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater treatment required.	Release fraction to soil from p	rocess (initial release prior to RMM):	1,0E-03
lease estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater treatment required.	Technical conditions and me	easures at process level (source) to pr	revent release
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sions and releases to soil Risk from environmental exposure is driven by freshwater. Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater treatment required.			
Risk from environmental exposure is driven by freshwater. Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater treatment required.		and measures to reduce or limit disch	arges, air emis-
Prevent discharge of undissolved substance to or recover from onsite wastewater. No wastewater treatment required.	sions and releases to soil		
wastewater. No wastewater treatment required.			
		ved substance to or recover from onsite	
Treat air emission to provide a typical removal efficiency of (%) 70			
	Treat air emission to provide a	typical removal efficiency of (%)	70

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Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	2,3E+06
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	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 Version 3	3 tool has been used to estimate workplace exposures unless

The ECETOC TRA Version 3 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 no	t expected to exceed the DN(M)EL when the Risk Management
Measures/Operational Cond	ditions outlined in Section 2 are implemented.
l	

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

Section 4.2 - Environment

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

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

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gies, either alone or in combination.

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

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Exposure Scenario - Worker

30000000890	
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, PROC19 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4b.v1
Scope of process	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).

SECTION 2	OPERATIONAL CONDITIONS AND RISK I MEASURES	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 percentage substance in the product Unless stated otherwise.,	t up to 100%.,
Frequency and Duration of	f Use	
Covers daily exposures up to	o 8 hours (unless stated differently).	
Other Operational Condition	ons affecting Exposure	
	an 20°C above ambient temperature (unless sidard of occupational hygiene is implemented.	tated differently).

Contributing Scenarios	Risk Management Measures	
Filling/ preparation of equipme from drums or containers.Dedicated facilityPROC8b		
Filling/ preparation of equipme from drums or containers.Non-dedicated facilityPROC8a	·	
Automated process with (semi closed systems.Use in contain systemsPROC2	,	
Automated process with (semi closed systems.Drum/batch trafersUse in contained batch processesPROC3	ans-	
Semi Automated process. (e.g Semi automatic application of floor care and maintenance pr ucts)PROC4		

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ManualSurfacesCleaningDipping, immersion and pouringPROC13	No other specific measures identified.
Cleaning with low-pressure washersRolling, Brushingno sprayingPROC10	No other specific measures identified.
Cleaning with high pressure washersSprayingPROC11	Limit the substance content in the product to 5 %. Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.
ManualSurfacesCleaningPROC10	No other specific measures identified.
Ad hoc manual application via trigger sprays, dipping, etc.Rolling, BrushingPROC10	No other specific measures identified.
Application of cleaning products in closed systemsPROC4	No other specific measures identified.
Hand-mixing with intimate contact and only PPE available PROC19	Wear suitable gloves tested to EN374.
Storage.PROC1	Store substance within a closed system.

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	30
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/	year):	0,015
Maximum daily site tonnage (0,041
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
	nfluenced by risk management	
Local freshwater dilution factor:		10
Local marine water dilution factor:		100
Other Operational Conditions affecting Environmental Exposure		
	ide dispersive use (regional only):	0,02
Release fraction to wastewater from wide dispersive use:		1,0E-06
Release fraction to soil from wide dispersive use (regional only): 0		•
Technical conditions and measures at process level (source) to prevent release		event release
	ss sites thus conservative process re-	
lease estimates used.		
	s and measures to reduce or limit disch	arges, air emis-
sions and releases to soil		
Risk from environmental expo		
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		0

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the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	
Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	670
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	r disposal
External treatment and disposal of waste should comply with applicable	e local and/or regional
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regional
regulations.	

SECTION 3	EXPOSURE ESTIMATION
Section 3.1 - Health	
The ECCTOO TDA Version O	to all book and to a stigate to a displace and a source and a second

The ECETOC TRA Version 3 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	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management	
Measures/Operational Conditions outlined in Section 2 are implemented.	

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

30000000889	
30000000000	
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 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 percentage substance in the product up to 100%., Unless stated otherwise.,	
Frequency and Duration o	f Use	
Covers daily exposures up t	o 8 hours (unless stated differently).	
Other Operational Conditi	ons affecting Exposure	
	an 20°C above ambient temperature (unless stated differently).	

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios Risk Management Measures Bulk 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

Degreasing small objects in

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No other specific measures identified.

Degreasing small objects in		No other specific measures identifi	ea.
cleaning stationPROC13			
Cleaning with low-pressure wash-		No other specific measures identifi	ed.
ersPROC10			
Cleaning with high pressure		Provide a good standard of control	led ventilation (10 to 15
washersPROC7		air changes per hour).	
ManualSurfacesCleaningPROC10		No other specific measures identifi	ed.
Storage.PROC1		Store substance within a closed sy	stem.
Section 2.2	Cont	rol of Environmental Exposure	
Substance is complex UVCI	В.		
Predominantly hydrophobic.	ı		
Amounts Used			•
Fraction of EU tonnage used	d in reai	on:	0,1
Regional use tonnage (tonn			38
Fraction of Regional tonnag			1
Annual site tonnage (tonnes			38
Maximum daily site tonnage		/):	1,900
Frequency and Duration o		17-	1,000
Continuous release.			
Emission Days (days/year):			20
Environmental factors not	influer	nced by risk management	1 20
Local freshwater dilution fac			10
Local marine water dilution factor:		100	
		ecting Environmental Exposure	1 1 9 9
-		(initial release prior to RMM):	0,3
Release fraction to wastewater from process (initial release prior to		1E-08	
RMM):		(F F	
Release fraction to soil from	proces	s (initial release prior to RMM):	0
		es at process level (source) to pro	event release
Common practices vary acre	oss site	s thus conservative process re-	
lease estimates used.		·	
Technical onsite condition	ns and i	measures to reduce or limit disch	arges, air emis-
sions and releases to soil			
Risk from environmental exp	oosure i	s driven by freshwater.	
Prevent discharge of undiss	olved si	ubstance to or recover from onsite	
wastewater.			
No wastewater treatment re	quired.		
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 efficier	ncy of >	= (%)	
If discharging to domestic sewage treatment plant, provide the required onsite wastewater removal efficiency of (%)		0	
Organisational measures			
Do not apply industrial sludg			
Sludge should be incinerate	d, conta	nined or reclaimed.	
Conditions and Measures	related	to municipal sewage treatment p	lant

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Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	·
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	2,9E+06
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
On the second se	12

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 Version 3 tool has been used to estimate workplace exposures unless		
otherwise indicated		

Section 3.2 -Environment

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

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

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

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

Section 4.2 -Environment

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

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

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

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Exposure Scenario - Worker

300000000880	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses 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 - 10 kPa at STP	
Concentration of the Sub-	Covers percentage substance in the product up to 100%.,	
stance in Mixture/Article	Unless stated otherwise.,	
Frequency and Duration of	Use	
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Conditions affecting Exposure		
Assumes use at not more than 20°C above ambient temperature (unless stated differently).		

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

Contributing Scenarios	Risk	Management Measures	
General exposures (closed sy tems)PROC1	'S-	No other specific measures identified.	
Filling/ preparation of equipme from drums or containers.Use contained systemsPROC2		No other specific measures identified.	
General exposures (closed sy tems)Use in contained systemsPROC2	/S-	No other specific measures identified.	
Preparation of material for approactionUse in contained batch processesPROC3	oli-	No other specific measures identified.	
Film formation - air dryingPRC	C4	No other specific measures identified.	
Preparation of material for app cationPROC5	oli-	No other specific measures identified.	

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Material transfersDrum/batch	No other specific measures identifie	d	
transfersNon-dedicated facili-	140 other specific measures identifie	u.	
tyPROC8a			
Material transfersDrum/batch	No other specific measures identifie	d	
transfersDedicated facili-	The other specific measures identifie	u.	
tyPROC8b			
Roller, spreader, flow applica-	No other specific measures identifie	d.	
tionPROC10	,		
ManualSprayingIndoorPROC11	Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours Wear suitable gloves tested to EN374. Other skin protection measures such as impervious suits and face shields may be required during high dispersion activities which are likely to lead to substantial aerosol release, e.g. spraying.		
ManualSprayingOutdoorPROC11	Ensure operation is undertaken outon Avoid carrying out activities involving 4 hours Wear suitable gloves tested to EN37	g exposure for more than	
	Other skin protection measures such		
	face shields may be required during		
	which are likely to lead to substantia	al aerosol release, e.g.	
	spraying.		
Disping immersion and nour	No other execitions accuracy identific	۵	
Dipping, immersion and pour-ingPROC13	No other specific measures identifie	a.	
Laboratory activitiesPROC15	No other specific measures identifie	d	
Laboratory activities 110013	140 other specific measures identifie	u.	
Hand application - fingerpaints,	Provide a good standard of general ventilation (not less than		
pastels, adhesivesPROC19	3 to 5 air changes per hour).		
	Wear suitable gloves tested to EN37	74.	
Equipment cleaning and maintenancePROC8a	No other specific measures identifie	d.	
Storage.PROC1	Store substance within a closed sys	tem.	
		1	
	ntrol of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Amounts Used	.		
Fraction of EU tonnage used in re		0,1	
Regional use tonnage (tonnes/yea		180	
Fraction of Regional tonnage used		5,0E-04	
Annual site tonnage (tonnes/year)		0,09	
Maximum daily site tonnage (kg/d	ay).	0,25	
Frequency and Duration of Use Continuous release.			
Emission Days (days/year):		365	
Emission Days (days/year).		000	

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Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	100
	10.00
Release fraction to air from wide dispersive use (regional only):	0,98
Release fraction to wastewater from wide dispersive use:	0,01
Release fraction to soil from wide dispersive use (regional only):	0,01
Technical conditions and measures at process level (source) to pr	event release
Common practices vary across sites thus conservative process re- lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	30,4
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	00,1
Maximum allowable site tonnage (MSafe) based on release following	230
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	
External treatment and disposal of waste should comply with applicable	
regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable	local and/or regiona
regulations.	

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 -Environment

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

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

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

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Exposure Scenario - Worker

Exposure Scenario - Work	51
30000000879	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses 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 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 Sub-	Covers percentage substance in the product up to 100%.,	
stance in Mixture/Article	Unless stated otherwise.,	
Frequency and Duration of	Use	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Conditio		
	in 20°C above ambient temperature (unless stated differently).	
	ard of occupational hygiene is implemented.	
Contributing Scenarios Risk Management Measures		
General exposures (closed systems)PROC1	No other specific measures identified.	
General exposures (closed systems) with sample collectionUse in contained systemsPROC2	No other specific measures identified.	
Film formation - force 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)Use in contained	No other specific measures identified.	

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batch processesPROC3			
Film formation - air dry-	No other specific measures identified.		
ing(open systems)PROC4	The other specific incasares lacitation.		
Preparation of material for	No other specific measures identified.		
applicationMixing opera-	The other opeoine meddares identified.		
tions (open sys-			
tems)PROC5			
Spraying (automat-	Provide a good standard of controlled ven	tilation (10 to 15 air	
ic/robotic)PROC7	changes per hour).	(10 10 10 11	
, , , , , , , , , , , , , , , , , , , ,	3.5 ()		
ManualSprayingPROC7	Provide a good standard of controlled ven	tilation (10 to 15 air	
	changes per hour).	,	
	,		
Material transfersNon-	No other specific measures identified.		
dedicated facilityPROC8a			
Material transfersDedicated	No other specific measures identified.		
facilityPROC8b			
Roller, spreader, flow appli-	No other specific measures identified.		
cationPROC10			
Dipping, immersion and	No other specific measures identified.		
pouringPROC13			
Laboratory activi-	No other specific measures identified.		
tiesPROC15			
Material trans-	No other specific measures identified.		
fersDrum/batch transfer-			
sTransfer from/pouring from			
containersPROC9			
Production or preparation	No other specific measures identified.		
or articles by tabletting,			
compression, extrusion or			
pelletisationPROC14	No other enseific manaures identified		
Equipment cleaning and maintenancePROC8a	No other specific measures identified.		
Storage.PROC1	Store substance within a closed system.		
Storage.FROCT	Store substance within a closed system.		
Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB			
Predominantly hydrophobic.			
	Amounts Used Fraction of EU tonnage used in region: 0,1		
Regional use tonnage (tonne		420	
Fraction of Regional tonnage		1	
Annual site tonnage (tonnes/		420	
		2,1E+04	
Frequency and Duration of			
Continuous release.			
Emission Days (days/year):		20	
Emission Days (days/year): 20 Environmental factors not influenced by risk management			
Local freshwater dilution factor		10	
Local marine water dilution fa		100	
	Other Operational Conditions affecting Environmental Exposure		
2 Operational contains			

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Release fraction to air from process (initial release prior to RMM):	0,98
Release fraction to wastewater from process (initial release prior to	2,0E-05
RMM):	
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to pro	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit disch	arges, air emis-
sions and releases to soil	
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no onsite	
wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide	61,2
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	2,3E+05
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	
External treatment and disposal of waste should comply with applicable	local and/or 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 Version 3 tool has been used to estimate workplace exposures unless		
otherwise indicated		

Section 3.2 -Environment

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

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GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

	Exposure Scenario - Worker		
30000000878			
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 - 10 kPa at STF)	
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,		
Frequency and Duration of Use			
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Conditions affecting Exposure			
Assumes use at not more than 20°C above ambient temperature (unless stated differently).			

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios Risk Management Measures General exposures (closed No other specific measures identified. systems)PROC1PROC2PROC3 No other specific measures identified. General exposures (open systems)PROC4 Batch processes at elevated No other specific measures identified. temperaturesUse in contained batch processesOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC3 Process samplingPROC3 No other specific measures identified. Laboratory activitiesPROC15 No other specific measures identified. Bulk transfersPROC8b No other specific measures identified.

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Mixing operations (open systems)PROC5	No other specific measures identified	d.			
ManualTransfer from/pouring					
from containersNon-dedicated	'				
facilityPROC8a					
Drum/batch transfersDedicated	d.				
facilityPROC8b	•				
Production or preparation or	No other specific measures identified	d.			
articles by tabletting, compres-					
sion, extrusion or pelletisa-					
tionPROC14					
Drum and small package fill-	No other specific measures identified	d.			
ingPROC9	No. of the control of	<u> </u>			
Equipment cleaning and	No other specific measures identified	J.			
maintenancePROC8a	Ctore substance within a sleep dougt				
Storage.PROC1PROC2	Store substance within a closed syst	em.			
·	ntrol of Environmental Exposure				
Substance is complex UVCB.					
Predominantly hydrophobic.					
Amounts Used					
Fraction of EU tonnage used in re		0,1			
Regional use tonnage (tonnes/yea		95			
Fraction of Regional tonnage use		1			
Annual site tonnage (tonnes/year)	95				
Maximum daily site tonnage (kg/d	9.500				
Frequency and Duration of Use					
Continuous release.					
Emission Days (days/year):	10				
Environmental factors not influ	enced by risk management				
Local freshwater dilution factor:	10				
Local marine water dilution factor		100			
	ffecting Environmental Exposure				
Release fraction to air from proce	0,98				
sistent with EU Solvent Emissions					
Release fraction to wastewater fro	5,0E-06				
RMM):	4.05.04				
Release fraction to soil from proce	ess (initial release prior to RMM): ures at process level (source) to pr	1,0E-04 event release			
Common practices vary across si					
lease estimates used.	p				
Technical onsite conditions and sions and releases to soil	d measures to reduce or limit disch	arges, air emis-			
	e is driven by freshwater sediment.				
Prevent discharge of undissolved	+				
wastewater.					
No wastewater treatment required	1				
Treat air emission to provide a typ	0				
Treat onsite wastewater (prior to	0				
the required removed efficiency of	~				

the required removal efficiency of >= (%)

If discharging to domestic sewage treatment plant, provide the re-

0

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quired onsite wastewater removal efficiency of (%)				
Organisational measures to prevent/limit release from site				
Do not apply industrial sludge to natural soils.				
Sludge should be incinerated, contained or reclaimed.				
Sludge should be inclinerated, contained of reclaimed.				
Conditions and Measures related to municipal sewage treatment p	lant			
Estimated substance removal from wastewater via domestic sewage	96,4			
treatment (%)				
Total efficiency of removal from wastewater after onsite and offsite	96,4			
(domestic treatment plant) RMMs (%)				
Maximum allowable site tonnage (MSafe) based on release following	9,1E+05			
total wastewater treatment removal (kg/d)				
Assumed domestic sewage treatment plant flow (m3/d)	2.000			
Conditions and Measures related to external treatment of waste fo	r disposal			
External treatment and disposal of waste should comply with applicable	local and/or 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
SECTIONS	

Section 3.1 - Health

The ECETOC TRA Version 3 tool has been used to estimate workplace exposures unless otherwise indicated

Section 3.2 - Environment

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

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

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

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

Section 4.2 -Environment

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

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

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

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Exposure Scenario - Worker

Exposure coeriano Troi			
30000000877			
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 distribu-		
	tion and associated laboratory activities.		
	,		

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Worker Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
Frequency and Duration of	of Use	
Covers daily exposures up	to 8 hours (unless stated differently).	
Other Operational Conditi	ons affecting Exposure	
	nan 20°C above ambient temperature (unless stated of occupational hygiene is implemented.	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.
Process samplingPROC3		No other specific measures identified.
Laboratory activitiesPROC15		No other specific measures identified.
Bulk transfers(closed systems)PROC8b		No other specific measures identified.
Bulk transfers(open systems)PROC8b		No other specific measures identified.
Drum and small package fill-ingPROC9		No other specific measures identified.
Equipment cleaning and maintenancePROC8a		No other specific measures identified.
Storage.PROC1PROC2		Store substance within a closed system.

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Section 2.2	Control of Environmental Exposure				
Substance is complex UVCE					
Predominantly hydrophobic.					
Amounts Used		•			
Fraction of EU tonnage used	in region:	0,1			
Regional use tonnage (tonne		230			
Fraction of Regional tonnage		2,0E-03			
Annual site tonnage (tonnes	year):	0,46			
Maximum daily site tonnage	(kg/day):	23			
Frequency and Duration of	Use				
Continuous release.					
Emission Days (days/year):		20			
Environmental factors not	influenced by risk management				
Local freshwater dilution fact	or:	10			
Local marine water dilution fa		100			
•	ns affecting Environmental Exposure				
	rocess (initial release prior to RMM):	1,0E-02			
RMM):	er from process (initial release prior to	1,0E-05			
	process (initial release prior to RMM):	1,0E-05			
	neasures at process level (source) to pr	revent release			
	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	narges, air emis-			
Risk from environmental exp	osure is driven by freshwater.				
Prevent discharge of undisso	olved substance to or recover from onsite				
wastewater.					
No wastewater treatment red					
	a typical removal efficiency of (%)	90			
	or to receiving water discharge) to provide	0			
the required removal efficien					
	wage treatment plant, provide the re-	0			
quired onsite wastewater ren	noval efficiency of (%)				
	o prevent/limit release from site				
Do not apply industrial sludg	e to natural soils.				
Sludge should be incinerated	I, contained or reclaimed.				
Conditions and Measures	related to municipal sewage treatment p	olant			
	Il from wastewater via domestic sewage	96,4			
treatment (%)	_				
Total efficiency of removal fro (domestic treatment plant) R	96,4				
Maximum allowable site tonr total wastewater treatment re	7,0E+04				
Assumed domestic sewage t	2.000				
	related to external treatment of waste for	or disposal			
	sal of waste should comply with applicable				

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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 Version 3 tool has been used to estimate workplace exposures unless otherwise indicated

Section 3.2 -Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

Exposure occitatio Works	-
30000000876	
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 - 10 kPa at STP		
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,		
Frequency and Duration of Use			
Covers daily exposures up to 8 hours (unless stated differently).			
Other Operational Conditions affecting Exposure			
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.			

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

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	T
Substance is complex UVCB.	
Predominantly hydrophobic.	
Amounts Used	1
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	2,4E+03
Fraction of Regional tonnage used locally:	1
Annual site tonnage (tonnes/year):	2,4E+03
Maximum daily site tonnage (kg/day):	2,4E+04
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	100
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1,0E-02
Release fraction to wastewater from process (initial release prior to RMM):	1,0E-05
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	5 ,
Risk from environmental exposure is driven by freshwater sediment.	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
No wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	90
Treat onsite wastewater (prior to receiving water discharge) to provide	0
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment p	
Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	96,4
(domestic treatment plant) RMMs (%)	0.05.00
Maximum allowable site tonnage (MSafe) based on release following	2,3E+06
total wastewater treatment removal (kg/d)	10.000
Assumed domestic sewage treatment plant flow (m3/d)	10.000
Conditions and Measures related to external treatment of waste for	r disposal
During manufacturing no waste of the substance is generated.	
Conditions and measures related to external recovery of waste	
During manufacturing no waste of the substance is generated.	

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SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

The ECETOC TRA Version 3 tool has been used to estimate workplace exposures unless otherwise indicated

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 -Environment

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

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

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

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Exposure Scenario - Worker

30000010709	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Rubber production and processing- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC6, PROC7, PROC8a, PROC8b, PROC9, PROC13, PROC14, PROC15, PROC21 Environmental Release Categories: ERC1, ERC4, ERC6d, ESVOC SpERC 4.19.v1
Scope of process	Manufacture of tyres and general rubber articles, including processing of raw (uncured) rubber, handling and mixing of rubber additives, vulcanising, cooling and finishing.

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 percentage substance in the product up to 100%., Unless stated otherwise.,	
Frequency and Duration o	f Use	
Covers daily exposures up to 8 hours (unless stated differently).		
Other Operational Condition	ons affecting Exposure	
	an 20°C above ambient temperature (unless 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	k Management Measures
Material transfers(closed systems)PROC1PROC2		No other specific measures identified.
Material transfersDedicated fa ityPROC8aPROC8bPROC9	acil-	No other specific measures identified.
Bulk weighingUse in containe systemsPROC1PROC2	d	No other specific measures identified.
Small scale weighingPROC9		No other specific measures identified.
Additive premix- ingPROC3PROC4PROC5		No other specific measures identified.
Calendering (including Banbuys)Operation is carried out at elevated temperature (> 20°C above ambient temperature).PROC6		No other specific measures identified.
Pressing uncured rubber blan sPROC14	k-	No other specific measures identified.
Tyre build upPROC7		Provide a good standard of controlled ventilation (10 to 15 air

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	changes per hour).	
VulcanisationOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC6	No other specific measures identified.	
Cooling cured articlesOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC6	No other specific measures identified.	
Production of articles by dipping and pouringPROC13	No other specific measures identified.	
Finishing operationsPROC21	No other specific measures identified.	
Laboratory activitiesPROC15	No other specific measures identified.	
Equipment maintenance- PROC8a	No other specific measures identified.	
Storage.PROC1	Store substance within a closed system.	
Storage.PROC2	Store substance within a closed system.	
Section 2.2 Cor	ntrol of Environmental Exposure	

Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB	<u> </u>		
Predominantly hydrophobic.			
Amounts Used		1	
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne		5,0E+00	
Fraction of Regional tonnage		1	
Annual site tonnage (tonnes/		5,0E+00	
Maximum daily site tonnage (2,5E+02	
Frequency and Duration of		,	
Continuous release.			
Emission Days (days/year):		20	
	nfluenced by risk management	1	
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	
Other Operational Conditions affecting Environmental Exposure			
Release fraction to air from p	rocess (initial release prior to RMM):	0,01	
	er from process (initial release prior to	1,0E-05	
Release fraction to soil from	process (initial release prior to RMM):	0,0001	
Technical conditions and measures at process level (source) to prevent 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		1	
	osure is driven by freshwater.		
No wastewater treatment req			
	a typical removal efficiency of (%)	0	
Treat onsite wastewater (prior to receiving water discharge) to provide		0,0	

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the required removal efficiency of >= (%)			
If discharging to domestic sewage treatment plant, provide the re-	0,0		
quired onsite wastewater removal efficiency of (%)			
Organisational measures to prevent/limit release from site			
Prevent discharge of undissolved substance to or recover from onsite v	vastewater.		
Do not apply industrial sludge to natural soils.			
Sludge should be incinerated, contained or reclaimed.			
Conditions and Measures related to municipal sewage treatment p	olant		
Not applicable as there is no release to wastewater.			
Estimated substance removal from wastewater via domestic sewage treatment (%)	96,4		
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	96,4		
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	2,9E+04		
Assumed domestic sewage treatment plant flow (m3/d)	2.000		
Conditions and Measures related to external treatment of waste for disposal			
External treatment and disposal of waste should comply with applicable local and/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
3EC11014 3	EXI OSCINE ESTIMATION

Section 3.1 - Health

The ECETOC TRA Version 3 tool has been used to estimate workplace exposures unless otherwise indicated

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 -Environment

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

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measures.

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

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

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Exposure Scenario - Consumer

30000001153	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Functional Fluids - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC16, PC17 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.13c.v1
Scope of process	Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa at STP	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100	%
Amounts Used		
Unless stated otherwise.		
covers amount up to (g):		2.200
covers skin contact area (cm2):		468
Frequency and Duration of	f Use	
Unless stated otherwise.		
Covers use up to (days/year):		4
covers use up to (times/day of use):		1
Covers exposure up to (hours/event): 0,17		0,17
Other Operational Conditions affecting Exposure		

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Heat transfer fluids Liquids.	Covers concentrations up to 100 %
	covers use up to 4 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 2.200 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	for each use event Covers exposure up to 0,17 hours/event
Hydraulic fluids Liquids.	Covers concentrations up to 100 %

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

Section 2.2 Control of Environmental Exposure		
Substance is complex UVCB	•	
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	10
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/	year):	5,0E-03
Maximum daily site tonnage	(kg/day):	0,014
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
Environmental factors not	influenced by risk management	
Local freshwater dilution fact	or:	10
Local marine water dilution fa	actor:	100
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from w	vide dispersive use (regional only):	0,05
Release fraction to wastewat	er from wide dispersive use:	0,025
Release fraction to soil from wide dispersive use (regional only):		0,025
Conditions and Measures r	elated to municipal sewage treatment p	olant
Risk from environmental exp	osure is driven by freshwater.	
Estimated substance remova	I from wastewater via domestic sewage	96,4
treatment (%)		
	age (MSafe) based on release following	20
total wastewater treatment re		
Assumed domestic sewage treatment plant flow (m3/d)		2.000
	elated to external treatment of waste for	
	sal of waste should comply with applicable	e local and/or region-
al regulations.		

al regulations.

Conditions and measures related to external recovery of waste

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

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

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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.

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Exposure Scenario - Consumer

30000001151	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use as a fuel - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC13 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.12c.v1
Scope of process	Covers consumer uses in liquid fuels.

SECTION 2	OPERATIONAL CONDITIONS A MEASURES	AND RISK MANAGEMENT
Section 2.1	Control of Consumer Exposure	9
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa	at STP
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%):	100 %
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		37.500
covers skin contact area (cm2):		420
Frequency and Duration o	f Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		1
Exposure (hours/event):		2
Other Operational Conditional	one affecting Exposure	·

Other Operational Conditions affecting Exposure

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

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

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	covers use up to 52 day/year
	covers use up to 52 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210,00 cm2
	For each use event, covers amount up to 3.750 g
	Covers outdoor use.
	Covers use in room size of 100 m3
	for each use event Covers exposure up to 0,03 hours/event
Fuels Liquid, Garden Equipment - Use.	Covers concentrations up to 100 %
	covers use up to 26 day/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 750 g
	Covers outdoor use.
	Covers use in room size of 100 m3
	for each use event Covers exposure up to 2,00 hours/event
Fuels Liquid: Garden Equipment - Refuelling.	Covers concentrations up to 100 %
	covers use up to 26 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 420,00 cm2
	For each use event, covers amount up to 750 g
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers use in room size of 34 m3
	for each use event Covers exposure up to 0,03 hours/event
Fuels Liquid: Home space heater fuel.	Covers concentrations up to 100 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210,00 cm2
	For each use event, covers amount up to 3.000 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,03 hours/event
Fuels Liquid: Lamp oil.	Covers concentrations up to 100 %
	covers use up to 52 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 210,00 cm2
	For each use event, covers amount up to 100 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,01 hours/event
	1 101 Cach add event bevers exposure up to 0,01 hours/event

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB.		
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	n region:	0,1
Regional use tonnage (tonnes	s/year):	30
Fraction of Regional tonnage	used locally:	5,0E-04

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Annual site tonnage (tonnes/year):	0,015
Maximum daily site tonnage (kg/day):	0,041
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-03
Release fraction to wastewater from wide dispersive use:	1,0E-05
Release fraction to soil from wide dispersive use (regional only):	1,0E-05
Conditions and Measures related to municipal sewage treatment p	olant
Risk from environmental exposure is driven by freshwater.	
Estimated substance removal from wastewater via domestic sewage treatment (%)	96,4
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	67
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for	r disposal
Combustion emissions limited by required exhaust emission controls.	
Waste combustion emissions considered in regional exposure assessment	nent.
Conditions and measures related to external recovery of waste	
This substance is consumed during use and no waste of substance is of	generated.

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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measures.

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Exposure Scenario - Consumer

Expedit Contains		
30000001150		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Lubricants - Consumer High Environmental Release	
Use Descriptor	Sector of Use: SU21	
	Product Categories: PC1, PC24, PC31	
	Environmental Release Categories: ERC8a, ERC8d,	
	ESVOC SpERC 8.6e.v1	
	EGVOG OPENO 0.00.V1	
Scope of process	Covers the consumer use of formulated lubricants in closed	
Scope of process		
	and open systems including transfer operations, application,	
	operation of engines and similar articles, equipment mainte-	
	nance and disposal of waste oil.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa at STP	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100 %	
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		6.390
covers skin contact area (cm2):		468
Frequency and Duration of	Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		1
Exposure (hours/event): 6		6
Other Operational Conditions affecting Exposure		
I I a I a a a a Carta a I a di a a a Para	·	· · · · · · · · · · · · · · · · · · ·

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Adhesives, sealants Glues, hobby use.	Covers concentrations up to 30 %	
	covers use up to 365 day/year	
	covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 35,73 cm2	
	For each use event, covers amount up to 5 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	

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	for each use event Covers exposure up to 4,00 hours/event		
Adhesives, sealants Glues	Covers concentrations up to 30 %		
DIY-use (carpet glue, tile	Covers concentrations up to 50 %		
glue, wood parquet glue).			
giao, iroca parquot giao).	covers use up to 1 day/year		
	Covers use up to 1 times/day of use		
	covers skin contact area up to (cm2): 110,00 cm2		
	For each use event, covers amount up to 6.390 g		
	Covers use under typical household ventilation.		
	Covers use in room size of 20 m3		
	for each use event Covers exposure up to 6,00 hours/event		
Adhesives, sealants Glue	Covers concentrations up to 30 %		
from spray.	Covere controlling ap to co /c		
	covers use up to 6 day/year		
	Covers use up to 1 times/day of use		
	covers skin contact area up to (cm2): 35,73 cm2		
	For each use event, covers amount up to 85,05 g		
	Covers use under typical household ventilation.		
	Covers use in room size of 20 m3		
	for each use event Covers exposure up to 4,00 hours/event		
Adhesives, sealants Seal-	Covers concentrations up to 30 %		
ants.	Covers concentrations up to 30 %		
uno.	covers use up to 365 day/year		
	Covers use up to 1 times/day of use		
	covers skin contact area up to (cm2): 35,73 cm2		
	For each use event, covers amount up to 25 g		
	Covers use under typical household ventilation.		
	Covers use in room size of 20 m3		
	for each use event Covers exposure up to 1,00 hours/event		
Lubricants, greases, re-	Covers concentrations up to 100 %		
lease products Liquids.	Covers concentrations up to 100 %		
p Eldardo.	covers use up to 4 day/year		
p. casaco Elquido.	covers use up to 4 day/year Covers use up to 1 times/day of use		
p.eessio Eigano.	Covers use up to 1 times/day of use		
	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2		
	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g		
p	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventila-		
The second by th	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventilation.		
	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3		
	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,17 hours/event		
Lubricants, greases, re-	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3		
	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,17 hours/event Covers concentrations up to 20 %		
Lubricants, greases, re-	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year		
Lubricants, greases, re-	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year Covers use up to 1 times/day of use		
Lubricants, greases, re-	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2		
Lubricants, greases, re-	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 34 g		
Lubricants, greases, re- lease products Pastes.	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 34 g for each use event Covers exposure up to 4,00 hours/event		
Lubricants, greases, re- lease products Pastes.	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 34 g		
Lubricants, greases, re- lease products Pastes.	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 34 g for each use event Covers exposure up to 4,00 hours/event Covers concentrations up to 50 %		
Lubricants, greases, re- lease products Pastes.	Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 2.200 g Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 34 g for each use event Covers exposure up to 4,00 hours/event		

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

Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.	Predominantly hydrophobic.		
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonne	s/year):	2	
Fraction of Regional tonnage	used locally:	5,0E-04	
Annual site tonnage (tonnes/	year):	1,0E-03	
Maximum daily site tonnage (kg/day):	2,7E-03	
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not i	nfluenced by risk management		
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	
	ns affecting Environmental Exposure		
	ide dispersive use (regional only):	0,15	
Release fraction to wastewate		0,05	
Release fraction to soil from wide dispersive use (regional only):		0,05	
Conditions and Measures related to municipal sewage treatment plant			
Risk from environmental expo			
Estimated substance removal from wastewater via domestic sewage treatment (%)		96,4	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)		4,3	

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Assumed domestic sewage treatment plant flow (m3/d)

2.000

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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Exposure Scenario - Consumer

Exposure Contains		
30000001149		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Lubricants - Consumer Low Environmental Release	
Use Descriptor	Sector of Use: SU21 Product Categories: PC1, PC24, PC31 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.6d.v1	
Scope of process	Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa at STP	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100 %	
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		6.390
covers skin contact area (cm2):		468
Frequency and Duration of	f Use	
Unless stated otherwise.		
Covers use up to (days/year):		365
covers use up to (times/day of use):		1
Exposure (hours/event): 6		6
Other Operational Conditions affecting Exposure		
Unless stated athematics		

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

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

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	for each use event Covers exposure up to 4,00 hours/event		
Adhesives, sealants Glues	Covers concentrations up to 30 %		
DIY-use (carpet glue, tile	Covers concentiations up to 30 //		
glue, wood parquet glue).			
grae, meea parquet grae).	covers use up to 1 day/year		
	Covers use up to 1 times/day of use		
	covers skin contact area up to (cm2): 110,00 cm2		
	For each use event, covers amount up to 6.390 g		
	Covers use under typical household ventilation.		
	Covers use in room size of 20 m3		
	for each use event Covers exposure up to 6,00 hours/event		
Adhesives, sealants Glue	Covers concentrations up to 30 %		
from spray.	Covers concentrations up to 30 70		
nom spray.	covers use up to 6 day/year		
	Covers use up to 1 times/day of use		
	covers skin contact area up to (cm2): 35,73 cm2		
	For each use event, covers amount up to 85,05 g		
	Covers use under typical household ventilation.		
	Covers use in room size of 20 m3		
	for each use event Covers exposure up to 4,00 hours/event		
Adhasiyas saalanta Saal	Covers concentrations up to 30 %		
Adhesives, sealants Sealants.	Covers concentrations up to 30 %		
4.11.01	covers use up to 365 day/year		
	Covers use up to 1 times/day of use		
	covers skin contact area up to (cm2): 35,73 cm2		
	For each use event, covers amount up to 25 g		
	Covers use under typical household ventilation.		
	Covers use in room size of 20 m3		
	for each use event Covers exposure up to 1,00 hours/event		
Lubricants, greases, re-	Covers concentrations up to 100 %		
lease products Liquids.	Covere contrained up to 100 /		
Todoo producto Enquido.	covers use up to 4 day/year		
	Covers use up to 1 times/day of use		
	covers skin contact area up to (cm2): 468,00 cm2		
	For each use event, covers amount up to 2.200 g		
	Covers use in a one car garage (34 m3) under typical ventila-		
	tion.		
	Covers use in room size of 34 m3		
	for each use event Covers exposure up to 0,17 hours/event		
Lubricants, greases, re-	Covers concentrations up to 20 %		
lease products Pastes.			
	covers use up to 10 day/year		
	Covers use up to 1 times/day of use		
	covers skin contact area up to (cm2): 468,00 cm2		
	For each use event, covers amount up to 34 g		
	for each use event Covers exposure up to 4,00 hours/event		
Lubricants, greases, release products Sprays.	Covers concentrations up to 50 %		
	covers use up to 6 day/year		
	Covers use up to 1 times/day of use		
	covers skin contact area up to (cm2): 428,75 cm2		

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

Section 2.2	Control of Environmental Exposure		
Substance is complex UVCB.			
Predominantly hydrophobic.			
Amounts Used			
Fraction of EU tonnage used	in region:	0,1	
Regional use tonnage (tonnes	s/year):	2	
Fraction of Regional tonnage	used locally:	5,0E-04	
Annual site tonnage (tonnes/)	/ear):	1,0E-03	
Maximum daily site tonnage (kg/day):	2,7E-03	
Frequency and Duration of	Use		
Continuous release.			
Emission Days (days/year):		365	
Environmental factors not i	nfluenced by risk management		
Local freshwater dilution factor:		10	
Local marine water dilution factor:		100	
Other Operational Conditions affecting Environmental Exposure			
	ide dispersive use (regional only):	0,01	
Release fraction to wastewater from wide dispersive use:		0,01	
Release fraction to soil from wide dispersive use (regional only):		0,01	
Conditions and Measures related to municipal sewage treatment plant			
Risk from environmental expo			
Estimated substance removal from wastewater via domestic sewage treatment (%)		96,4	
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)		4,4	

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Assumed domestic sewage treatment plant flow (m3/d) 2.

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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Exposure Scenario - Consumer

instant action (aerosol

sprays).

30000001147	on summer
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Use in Cleaning Agents - Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC3, PC4, PC8 (excipient only), PC9a, PC24, PC35, PC38 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4c.v1
Scope of process	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Section 2.1	Control of Consumer Exposu	Control of Consumer Exposure	
Product Characteristics			
Physical form of product	Liquid, vapour pressure > 10 Pa	Liquid, vapour pressure > 10 Pa at STP	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.		
	Covers concentration up to (%): 100 %		
Amounts Used			
Unless stated otherwise.			
for each use event, covers a	amount up to (g):	13.800	
covers skin contact area (cr	n2):	857,5	
Frequency and Duration of	f Use		
Unless stated otherwise.			
Covers use up to (days/year):		365	
covers use up to (times/day		4	
Covers exposure up to (hou		8	
Other Operational Conditi	ons affecting Exposure		
Unless stated otherwise.			
Covers use at ambient temp			
Covers use in room size of			
Covers use under typical ho	usehold ventilation.		
Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES		
Air care products Air care,	Covers concentrations up to 50 %		

covers use up to 365 day/year covers use up to 4 times/day of use

For each use event, covers amount up to 0,1 g Covers use under typical household ventilation.

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	Covers use in room size of 20 m3	
	for each use event Covers exposure up to 0,25 hours/event	
Air care products Air care,	Covers concentrations up to 50 %	
instant action (aerosol	Covere concentrations up to 55 /5	
sprays). pesticides (excipi-		
ent only).		
	covers use up to 365 day/year	
	Covers use up to 4 times/day of use	
	For each use event, covers amount up to 5 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	for each use event Covers exposure up to 0,25 hours/event	
Air care products Air care, continuous action (solid and liquid).	Covers concentrations up to 10 %	
	covers use up to 365 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 35,70 cm2	
	For each use event, covers amount up to 0,48 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	for each use event Covers exposure up to 8,00 hours/event	
Air care products Air care,	Covers concentrations up to 50 %	
continuous action (solid and liquid). pesticides (excipient only).		
	covers use up to 365 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 35,70 cm2	
	For each use event, covers amount up to 0,48 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	for each use event Covers exposure up to 8,00 hours/event	
Anti-Freeze and de-icing products Washing car window.	Covers concentrations up to 1 %	
	covers use up to 365 day/year	
	Covers use up to 1 times/day of use	
	For each use event, covers amount up to 0,5 g	
	Covers use in a one car garage (34 m3) under typical ventilation.	
	Covers use in a one car garage (34 m3) under typical ventila-	
	Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3	
Anti-Freeze and de-icing products Pouring into radiator.	Covers use in a one car garage (34 m3) under typical ventilation.	
products Pouring into radia-	Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event Covers concentrations up to 10 %	
products Pouring into radia-	Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event Covers concentrations up to 10 % covers use up to 365 day/year	
products Pouring into radia-	Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event Covers concentrations up to 10 % covers use up to 365 day/year Covers use up to 1 times/day of use	
products Pouring into radia-	Covers use in a one car garage (34 m3) under typical ventilation. Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event Covers concentrations up to 10 % covers use up to 365 day/year	

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

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	for each use event Covers exposure up to 0,17 hours/event	
Coatings and paints, thin-	Covers concentrations up to 1,5 %	
ners, paint removers Wa-	Covers concentrations up to 1,5 %	
terborne latex wall paint.		
	covers use up to 4 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 428,75 cm2	
	For each use event, covers amount up to 2.760 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	for each use event Covers exposure up to 2,2 hours/event	
Coatings and paints, thin-	Covers concentrations up to 27,5 %	
ners, paint removers Sol-	Covers concentrations up to 27,5 %	
vent rich, high solid, water		
borne paint.		
	covers use up to 6 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 428,75 cm2	
	For each use event, covers amount up to 744 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	for each use event Covers exposure up to 2,2 hours/event	
Coatings and paints, thin-	Covers concentrations up to 50 %	
ners, paint removers Aero-	эт э	
sol spray can.		
, ,	covers use up to 2 day/year	
	Covers use up to 1 times/day of use	
	For each use event, covers amount up to 215 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 34 m3	
	for each use event Covers exposure up to 0,33 hours/event	
Coatings and paints, thin-	Covers concentrations up to 50 %	
ners, paint removers Re-	'	
movers (paint-, glue-, wall		
paper-, sealant-remover).		
	covers use up to 3 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 857,50 cm2	
	For each use event, covers amount up to 491 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	for each use event Covers exposure up to 2,00 hours/event	
Lubricants, greases, re-	Covers concentrations up to 100 %	
lease products Liquids.	'	
•	covers use up to 4 day/year	
	Covers use up to 1 times/day of use	
	covers skin contact area up to (cm2): 468,00 cm2	
	For each use event, covers amount up to 2.200 g	
	Covers use in a one car garage (34 m3) under typical ventila-	
	tion.	

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	for each use event Covers exposure up to 0,17 hours/event
Lubricants, greases, re-	Covers concentrations up to 20 %
lease products Pastes.	·
	covers use up to 10 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 34 g
	for each use event Covers exposure up to 4,00 hours/event
Lubricants, greases, re-	Covers concentrations up to 50 %
lease products Sprays.	
1 7	covers use up to 6 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 73 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,17 hours/event
Washing and cleaning	Covers concentrations up to 5 %
products (including solvent	Covere concentrations up to 6 70
based products) Laundry	
and dish washing products.	
and anon maning production	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 15 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,50 hours/event
Washing and cleaning	Covers concentrations up to 5 %
products (including solvent	Ouvers concentrations up to 5 %
based products) Cleaners,	
liquids (all purpose clean-	
ers, sanitary products, floor	
cleaners, glass cleaners,	
carpet cleaners, metal	
cleaners).	
	covers use up to 128 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 27 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,33 hours/event
Washing and cleaning	Covers concentrations up to 15 %
products (including solvent	Solid Solidonia and to 10 70
based products) Cleaners,	
trigger sprays (all purpose	
cleaners, sanitary products,	
glass cleaners).	
giaco dicarioroj.	covers use up to 128 day/year
	Covers use up to 1 times/day of use
	Covers use up to 1 times/uay of use

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regulations.

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	covers skin contact area up to (cm2): 428,00 cm2	
	For each use event, covers amount up to 35 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	for each use event Covers exposure up to 0,17 hours/event	
Welding and soldering products (with flux coatings or flux cores.), flux products	Covers concentrations up to 20 %	
	covers use up to 365 day/year	
	Covers use up to 1 times/day of use	
	For each use event, covers amount up to 12 g	
	Covers use under typical household ventilation.	
	Covers use in room size of 20 m3	
	for each use event Covers exposure up to 1,00 hours/event	

Section 2.2	Control of Environmental Exposure	
Substance is complex UVCB	•	
Predominantly hydrophobic.		
Amounts Used		
Fraction of EU tonnage used	in region:	0,1
Regional use tonnage (tonne	s/year):	10
Fraction of Regional tonnage	used locally:	5,0E-04
Annual site tonnage (tonnes/		5,0E-03
Maximum daily site tonnage	(kg/day):	0,014
Frequency and Duration of	Use	
Continuous release.		
Emission Days (days/year):		365
Environmental factors not	influenced by risk management	
Local freshwater dilution fact	or:	10
Local marine water dilution fa		100
Other Operational Condition	ns affecting Environmental Exposure	
Release fraction to air from wide dispersive use (regional only):		0,95
Release fraction to wastewater from wide dispersive use:		0,025
Release fraction to soil from wide dispersive use (regional only):		0,025
Conditions and Measures r	elated to municipal sewage treatment p	olant
	osure is driven by freshwater.	
Estimated substance remova	I from wastewater via domestic sewage	96,4
treatment (%)		
Maximum allowable site tonnage (MSafe) based on release following		20
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d)		2.000
	elated to external treatment of waste fo	
	sal of waste should comply with applicable	e local and/or region-
al regulations.		
Conditions and measures i	elated to external recovery of waste	

SECTION 3	EXPOSURE ESTIMATION

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

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Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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Exposure Scenario - Consumer

30000001146		
SECTION 1	EXPOSURE SCENARIO TITLE	
Title	Uses in Coatings - Consumer	
Use Descriptor	Sector of Use: SU21 Product Categories: PC1, PC4, PC8 (excipient only), PC9a, PC9b, PC9c, PC15, PC18, PC23, PC24, PC31, PC34 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.3c.v1	
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.	

SECTION 2	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES	
Section 2.1	Control of Consumer Exposure	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa	
Concentration of the Substance in Mixture/Article	Unless stated otherwise.	
	Covers concentration up to (%): 100 %	
Amounts Used		
Unless stated otherwise.		
for each use event, covers amount up to (g):		13.800
covers skin contact area (cm2):		857,5
Frequency and Duration of	Use	
Unless stated otherwise.		
Covers use up to (days/year):	365
covers use up to (times/day of use):		1
Exposure (hours/event):		6
Other Operational Condition	ons affecting Exposure	
Unless stated otherwise.		_
Carrage upon at ampliant toman		

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

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

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	Covers use in room size of 20 m3
	for each use event Covers exposure up to 4 hours/event
Adhesives, sealants Glues	Covers concentrations up to 30 %
DIY-use (carpet glue, tile	Covers concentrations up to 30 %
glue, wood parquet glue).	
gide, wood parquet gide).	covers use up to 1 day/year
	covers use up to 1 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 110,00 cm2
	For each use event, covers amount up to 6.390 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 6,00 hours/event
Adhesives, sealants Glue	Covers concentrations up to 30 %
from spray.	
	covers use up to 6 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 85,05 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 4,00 hours/event
Adhesives, sealants Seal-	Covers concentrations up to 30 %
ants.	
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 35,73 cm2
	For each use event, covers amount up to 75 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 1,00 hours/event
Anti-Freeze and de-icing products Washing car window.	Covers concentrations up to 1 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 0,5 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
Anti Eroozo and do ising	Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event
Anti-Freeze and de-icing products Pouring into radiator.	Covers use in room size of 34 m3
products Pouring into radia-	Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event
products Pouring into radia-	Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event Covers concentrations up to 10 %
products Pouring into radia-	Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event Covers concentrations up to 10 % covers use up to 365 day/year
products Pouring into radia-	Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event Covers concentrations up to 10 % covers use up to 365 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 428,00 cm2
products Pouring into radia-	Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event Covers concentrations up to 10 % covers use up to 365 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 428,00 cm2 For each use event, covers amount up to 2.000 g
products Pouring into radia-	Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event Covers concentrations up to 10 % covers use up to 365 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 428,00 cm2 For each use event, covers amount up to 2.000 g Covers use in a one car garage (34 m3) under typical ventila-
products Pouring into radia-	Covers use in room size of 34 m3 for each use event Covers exposure up to 0,02 hours/event Covers concentrations up to 10 % covers use up to 365 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 428,00 cm2 For each use event, covers amount up to 2.000 g

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Anti-Freeze and de-icing products Lock de-icer.	Covers concentrations up to 50 %
products Lock de-loer.	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 214,40 cm2
	For each use event, covers amount up to 4 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
	for each use event Covers exposure up to 0,25 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Laundry and dish washing products.	Covers concentrations up to 5 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 15 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,50 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, liquids (all purpose clean- ers, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).	Covers concentrations up to 5 %
	covers use up to 128 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 27 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,33 hours/event
Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, trigger sprays (all purpose cleaners,sanitary products, glass cleaners).	Covers concentrations up to 15 %
	covers use up to 128 day/year
-	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,00 cm2
	For each use event, covers amount up to 35 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,17 hours/event
Coatings and paints, thin- ners, paint removers Wa-	Covers concentrations up to 1,5 %

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

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	covers use up to 12 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 13.800 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 2,00 hours/event
Fillers, Putties Modelling clay.	Covers concentrations up to 1 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 254,40 cm2
	For each use event, assumes swallowed amount of 1 g
Finger paints	Covers concentrations up to 50 %
a miger promise	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 254,40 cm2
	For each use event, assumes swallowed amount of 1,35 g
Non-metal-surface treat-	Covers concentrations up to 1,5 %
ment products Waterborne latex wall paint.	Covers concentrations up to 1,5 %
	covers use up to 4 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 2.760 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 2,20 hours/event
Non-metal-surface treat- ment products Solvent rich, high solid, water borne paint.	Covers concentrations up to 27,5 %
	covers use up to 6 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 744 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 2,20 hours/event
Non-metal-surface treat- ment products Aerosol spray can.	Covers concentrations up to 50 %
υμ.ω <u>γ</u> υω	covers use up to 2 day/year
	Covers use up to 1 times/day of use
	For each use event, covers amount up to 215 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
No. of the second	for each use event Covers exposure up to 0,33 hours/event
Non-metal-surface treat- ment products Removers	Covers concentrations up to 50 %

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(paint-, glue-, wall paper-,	
sealant-remover).	
,	covers use up to 3 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 491 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 2,00 hours/event
Ink and toners	Covers concentrations up to 10 %
	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 71,40 cm2
	For each use event, covers amount up to 40 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 2,20 hours/event
Leather tanning, dye, finish-	Covers concentrations up to 50 %
ing, impregnation and care	Covers concentrations up to 55 /5
products Polishes, wax /	
cream (floor, furniture,	
shoes).	
	covers use up to 29 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 56 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 1,23 hours/event
Leather tanning, dye, finish-	Covers concentrations up to 50 %
ing, impregnation and care	Covord controllinations up to co /s
products Polishes, spray	
(furniture, shoes).	
(covers use up to 8 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 56 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,33 hours/event
Lubricants, greases, re-	Covers concentrations up to 100 %
lease products Liquids.	Oovers concentiations up to 100 /0
iodos producto Elquido.	covers use up to 4 day/year
	covers use up to 1 times/day of use
	covers dise up to 1 times/day of dise covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 2.200 g
	Covers use in a one car garage (34 m3) under typical ventila-
	tion.
	Covers use in room size of 34 m3
Lubriconto aversas as	Covers exposure up to 0,17 hours/event
Lubricants, greases, re-	Covers concentrations up to 20 %

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lease products Pastes.	
iodos producto i dotos.	covers use up to 10 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 468,00 cm2
	For each use event, covers amount up to 34 g
	for each use event Covers exposure up to 4 hours/event
Lubricants, greases, re-	Covers concentrations up to 50 %
lease products Sprays.	Ouvers concentrations up to 30 %
leade predacte opraye.	covers use up to 6 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 428,75 cm2
	For each use event, covers amount up to 73 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
Polishes and wax blends	for each use event Covers exposure up to 0,17 hours/event
Polishes, wax / cream	Covers concentrations up to 50 %
(floor, furniture, shoes).	
(11001, furniture, shoes).	covers use up to 29 day/year
	covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 142 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 1,23 hours/event
Polishes and wax blends Polishes, spray (furniture,	Covers concentrations up to 50 %
shoes).	
	covers use up to 8 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 430,00 cm2
	For each use event, covers amount up to 35 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	for each use event Covers exposure up to 0,33 hours/event
Textile dyes, finishing and	Covers concentrations up to 10 %
impregnating products;	, , , , , , , , , , , , , , , , , , ,
including bleaches and	
other processing aids	
1	covers use up to 365 day/year
	Covers use up to 1 times/day of use
	covers skin contact area up to (cm2): 857,50 cm2
	For each use event, covers amount up to 115 g
	Covers use under typical household ventilation.
	Covers use in room size of 20 m3
	Covers exposure up to 1,00 hours/event
	1 Covers exposure up to 1,00 hours/event

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

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Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	50
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	0,025
Maximum daily site tonnage (kg/day):	0,068
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):	0,99
Release fraction to wastewater from wide dispersive use:	0,01
Release fraction to soil from wide dispersive use (regional only):	5,0E-03
Conditions and Measures related to municipal sewage treatment p	lant
Risk from environmental exposure is driven by freshwater.	
Estimated substance removal from wastewater via domestic sewage	96,4
treatment (%)	
Maximum allowable site tonnage (MSafe) based on release following	92
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste fo	r disposal
External treatment and disposal of waste should comply with applicable al regulations.	local and/or region-

Conditions and measures related to external recovery of waste

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

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

Section 3.2 - Environment

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

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE 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.	
1	

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

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Section 4.2 -Environment

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