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

1.1 Product identifier

Trade name : ShellSol A150 ND

Product code : Q7497

Registration number EU : 01-2119463583-34-0002

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

EC-No. : 918-811-1

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

Use of the Sub- : Industrial Solvent.

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

tered uses under REACH.

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

above without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier : Shell Chemicals Europe B.V.

PO Box 2334

3000 CH Rotterdam

Netherlands

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

Contact for Safety Data : sccmsds@shell.com

Sheet

1.4 Emergency telephone number

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

week)

Poison Centre Information (24 hr): 02/54774166

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

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

Shell plc.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

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

ways.

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

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posure, Category 3, Narcotic effects

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

egory 2

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

<u>(!)</u>





Signal word : Danger

Hazard statements : PHYSICAL HAZARDS:

Not classified as a physical hazard according to CLP

criteria.

HEALTH HAZARDS:

H304 May be fatal if swallowed and enters airways.

H336 May cause drowsiness or dizziness.

ENVIRONMENTAL HAZARDS:

H411 Toxic to aquatic life with long lasting effects.

Supplemental Hazard

Statements

EUH066

Repeated exposure may cause skin dryness or

cracking.

Precautionary statements : Prevention:

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

P273 Avoid release to the environment.

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

P331 Do NOT induce vomiting.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste

disposal plant.

2.3 Other hazards

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

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

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In use, may form flammable/explosive vapour-air mixture.

This material is a static accumulator.

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

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

SECTION 3: Composition/information on ingredients

3.1 Substances

Components

| Chemical name | CAS-No. | Concentration (% w/w) |
|-------------------------|--------------|-----------------------|
| | EC-No. | |
| Hydrocarbons, C10, aro- | Not Assigned | <= 100 |
| matics, <1% naphthalene | 918-811-1 | |

Further information

Contains:

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

SECTION 4: First aid measures

4.1 Description of first aid measures

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

conditions.

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

appropriate personal protective equipment according to the

incident, injury and surroundings.

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

transport to nearest medical facility for additional treatment.

In case of skin contact : Remove contaminated clothing. Flush exposed area with wa-

ter and follow by washing with soap if available.

If persistent irritation occurs, obtain medical attention.

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

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

rinsing.

If persistent irritation occurs, obtain medical attention.

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

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

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Breathing of high vapour concentrations may cause central

nervous system (CNS) depression resulting in dizziness, lightheadedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and

death.

No specific hazards under normal use conditions.

Skin irritation signs and symptoms may include a burning sen-

sation, redness, or swelling.

No specific hazards under normal use conditions.

Eye irritation signs and symptoms may include a burning sen-

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

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

congestion, shortness of breath, and/or fever.

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

Defatting dermatitis signs and symptoms may include a burn-

ing sensation and/or a dried/cracked appearance.

4.3 Indication of any immediate medical attention and special treatment needed

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

Potential for chemical pneumonitis.

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

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

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

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Unsuitable extinguishing

media

: Do not use water in a jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

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

A complex mixture of airborne solid and liquid particulates and

gases (smoke). Carbon monoxide.

Unidentified organic and inorganic compounds.

Flammable vapours may be present even at temperatures

below the flash point.

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

distant ignition is possible.

Will float and can be reignited on surface water.

5.3 Advice for firefighters

Special protective equipment:

for firefighters

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

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

Specific extinguishing meth-

ods

Standard procedure for chemical fires.

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

Flammable liquid III. Class!

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Observe all relevant local and international regulations.

Notify authorities if any exposure to the general public or the

environment occurs or is likely to occur.

Local authorities should be advised if significant spillages

cannot be contained.

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

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

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

Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

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

6.2 Environmental precautions

Environmental precautions : Shut off leaks, if possible without personal risks. Remove all

possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bond-

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

6.3 Methods and material for containment and cleaning up

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

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

contaminated soil and dispose of safely.

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

Ventilate contaminated area thoroughly.

If contamination of site occurs remediation may require spe-

cialist advice.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures

Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see

Section 8 of this Safety Data Sheet.

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

material.

Ensure that all local regulations regarding handling and stor-

age facilities are followed.

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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.

Further information on stor-

age stability

Storage Temperature:

Ambient.

Bulk storage tanks should be diked (bunded).

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

strict procedures and precautions.

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

harmful or toxic to man or to the environment.

Electrostatic charges will be generated during pumping.

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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 |
|--------------------------------|-------------------|-------------------------------|--------------------|---------|
| Aromatic solvents 160 - 185 | Not As- signed | TWA | 100 mg/m3 | EU HSPA |

Biological occupational exposure limits

No biological limit allocated.

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

| Substance name | End Use | Exposure routes | Potential health ef- | Value |
|---|-----------|-----------------|----------------------------|----------------------|
| | | | fects | |
| Hydrocarbons, C10, aromatics, <1% naph- | Workers | Dermal | Long-term systemic effects | 12,5 mg/kg bw/day |
| thalene | | | | |
| Hydrocarbons, C10, aromatics, <1% naphthalene | Workers | Inhalation | Long-term systemic effects | 151 mg/m3 |
| Hydrocarbons, C10, | Consumers | Oral | Long-term systemic | 7,5 mg/kg |

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

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

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

8.2 Exposure controls

Engineering measures

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

Use sealed systems as far as possible.

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

Local exhaust ventilation is recommended.

Firewater monitors and deluge systems are recommended.

Eye washes and showers for emergency use.

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

General Information:

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

Define procedures for safe handling and maintenance of controls.

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

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

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

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

Personal protective equipment

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

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

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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: butylrubber 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.

Protective clothing approved to EU Standard EN14605.

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

If engineering controls do not maintain airborne concentra-Respiratory protection

> 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.

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

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

priate combination of mask and filter.

If air-filtering respirators are suitable for conditions of use:

Select a filter suitable for organic gases and vapours [Type A

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

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state : Liquid.

Colour : colourless

Odour : aromatic

Odour Threshold : Data not available

Melting point/freezing point : Data not available

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

Flammability

Flammability (solid, gas) : Data not available

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / : upper flammability limit

upper flammability limit 6 %(V)

Lower explosion limit / : Lower flammability limit

Lower flammability limit 0,6 %(V)

Flash point : Typical 63 °C

Method: ASTM D-93 / PMCC

Auto-ignition temperature : 499 °C

Method: ASTM E-659

477 °C

Method: DIN 51794

Decomposition temperature

Decomposition tempera-

ture

Data not available

pH : Data not available

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Viscosity

Viscosity, dynamic : Data not available

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

Method: ASTM D445

Solubility(ies)

Water solubility : immiscible

Partition coefficient: n-

octanol/water

 $\log Pow: > 3.7 - 4.2$

Vapour pressure : Typical 150 Pa

Relative density : Data not available

Density : Typical 884 kg/m3 (15 °C)

Method: ASTM D4052

Relative vapour density : Data not available

Particle characteristics

Particle size : Data not available

9.2 Other information

Explosives : Not applicable

Oxidizing properties : Data not available

Evaporation rate : 0,1

Method: ASTM D 3539, nBuAc=1

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

Method: ASTM 3114

Low conductivity: < 100 pS/m

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

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

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

can greatly influence the conductivity of a liquid

Surface tension : Data not available

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SECTION 10: Stability and reactivity

10.1 Reactivity

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

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

10.4 Conditions to avoid

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

In certain circumstances product can ignite due to static elec-

tricity.

10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.

10.6 Hazardous decomposition products

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

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

SECTION 11: Toxicological information

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

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

exposure skin or eye contact, and accidental ingestion.

Acute toxicity

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Acute oral toxicity : LD50 (Rat): > 5000 mg/kg

Remarks: Low toxicity

Acute inhalation toxicity : LC50 (Rat): > 2 - 20 mg/l

Remarks: Low toxicity if inhaled.

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

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Acute dermal toxicity : LD50 (Rabbit): > 2000 mg/kg

Remarks: Low toxicity

Skin corrosion/irritation

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Remarks : Not irritating to skin.

Prolonged/repeated contact may cause defatting of the skin

which can lead to dermatitis.

Serious eye damage/eye irritation

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Remarks : Not irritating to eye.

Respiratory or skin sensitisation

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Remarks : Not a sensitiser.

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

Germ cell mutagenicity

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Genotoxicity in vivo : Remarks: Not mutagenic.

Germ cell mutagenicity- As- :

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

Carcinogenicity

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Remarks : Limited evidence of carcinogenic effect

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

| Material | GHS/CLP Carcinogenicity Classification |
|----------------------------|--|
| Hydrocarbons, C10, aromat- | No carcinogenicity classification. |

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| ics, <1% naphthalene | |
|----------------------|----------------------------|
| Naphthalene | Carcinogenicity Category 2 |

| Material | Other Carcinogenicity Classification |
|-------------|---|
| Naphthalene | IARC: Group 2B: Possibly carcinogenic to humans |

Reproductive toxicity

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Effects on fertility :

Remarks: Causes foetotoxicity in animals at doses which are maternally toxic., Not a developmental toxicant., Based on available data, the classification criteria are not met., Does not

impair fertility.

Reproductive toxicity - As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

STOT - single exposure

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Remarks : May cause drowsiness and dizziness.

High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea.

STOT - repeated exposure

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

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

sidered relevant to humans

Aspiration toxicity

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

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

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11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment The substance/mixture does not contain components consid-

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

levels of 0.1% or higher.

Further information

Product:

Remarks Unless indicated otherwise, the data presented is representa-

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

ponent(s).

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Remarks Classifications by other authorities under varying regulatory

frameworks may exist.

SECTION 12: Ecological information

12.1 Toxicity

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

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

Toxic

aquatic invertebrates

Toxicity to daphnia and other : Remarks: LC/EC/IC50 >1 - <=10 mg/l

Toxic

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

Toxic

Toxicity to microorganisms

Remarks: Data not available

Toxicity to fish (Chronic tox-

icity)

Remarks: Data not available

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

Remarks: Data not available

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12.2 Persistence and degradability

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Biodegradability : Remarks: Readily biodegradable.

Oxidises rapidly by photo-chemical reactions in air.

12.3 Bioaccumulative potential

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Bioaccumulation : Remarks: Has the potential to bioaccumulate.

12.4 Mobility in soil

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Mobility : Remarks: Floats on water.

12.5 Results of PBT and vPvB assessment

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

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

tence, bioaccumulation and toxicity and hence is not consid-

ered to be PBT or vPvB..

12.6 Endocrine disrupting properties

Product:

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

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

12.7 Other adverse effects

Product:

Additional ecological infor-

mation

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

Components:

Hydrocarbons, C10, aromatics, <1% naphthalene:

Additional ecological infor-

mation

: Does not have ozone depletion potential.

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SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product Recover or recycle if possible.

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

ods in compliance with applicable regulations.

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

courses.

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

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

Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional,

national, and local laws and regulations.

Local regulations may be more stringent than regional or na-

tional requirements and must be complied with.

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

nical aspects at controlling pollutions from ships.

Contaminated packaging Drain container thoroughly.

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

cut or weld uncleaned drums.

Send to drum recoverer or metal reclaimer.

Comply with any local recovery or waste disposal regulations.

SECTION 14: Transport information

14.1 UN number or ID number

ADN : 3082 **ADR** 3082 **RID** 3082 **IMDG** 3082 IATA 3082

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14.2 UN proper shipping name

ADN : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Hydrocarbons, C10, aromatics)

ADR : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Hydrocarbons, C10, aromatics)

RID : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Hydrocarbons, C10, aromatics)

IMDG : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Hydrocarbons, C10, aromatics)

IATA : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,

N.O.S.

(Hydrocarbons, C10, aromatics)

14.3 Transport hazard class(es)

ADN : 9
ADR : 9
RID : 9
IMDG : 9
IATA : 9

14.4 Packing group

ADN

Packing group : III

Classification Code : M6

Labels : 9 (N2, F)

ADR

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

RID

Packing group : III
Classification Code : M6
Hazard Identification Number : 90
Labels : 9

IMDG

Packing group : III Labels : 9

IATA

Packing group : III Labels : 9

14.5 Environmental hazards

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ADN

Environmentally hazardous : yes

ADR

Environmentally hazardous : yes

RID

Environmentally hazardous : yes

IMDG

Marine pollutant : yes

14.6 Special precautions for user

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

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

needs to comply with in connection with transport.

14.7 Maritime transport in bulk according to IMO instruments

MARPOL Annex 1 rules apply for bulk shipments by sea.

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

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

space entry.

SECTION 15: Regulatory information

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

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

Product is not subject to Authorisation under REACH.

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).

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

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

ENVIRONMENTAL HAZARDS

Other regulations:

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

E2

Zákon NR SR č. 67/2010 Z. z. o podmienkach uvedenia chemických látok a chemických zmesí na trh a o zmene a doplnení niektorých zákonov (chemický zákon) v platnom znení.

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Zákon NR SR č. 79/2015 Z. z. o odpadoch a o zmene a doplnení niektorých zákonov v znení zmien a doplnkov. Zákon NR SR č. 90/ 2017 Z. z., ktorým sa mení a dopĺňa zákon č. 79/2015 Z. z. o odpadoch a o zmene a doplnení niektorých zákonov v znení neskorších predpisov. Zákon NR SR č. 364/2004 Z. z. o vodách a o zmene zákona NR SR č. 372/1990 Z. z. o priestupkoch v znení neskorších predpisov (vodný zákon).

Vyhláška MŽP SR č. 365/2015 Z. z., ktorou sa ustanovuje Katalóg odpadov, v platnom znení. NV SR č. 355/2006, 300/2007 a 471/2011 Z. z. o ochrane zdravia zamestnancov pred rizikami súvisiacimi s expozíciou chemickým faktorom pri práci v platnom znení.

Vyhláška MV SR č. 94/2004 Z. z., ktorou sa ustanovujú technické požiadavky na protipožiarnu bezpečnosť pri výstavbe a pri užívaní stavieb.

Vyhláška MV SR č. 96/2004 Z. z., ktorou sa ustanovujú zásady protipožiarnej bezpečnosti pri manipulácii a skladovaní horľavých kvapalín, ťažkých vykurovacích olejov a rastlinných a živočíšnych tukov a olejov.

Product is subject to Act No. 28/2015 Z. z. on prevention of major industrial accidents and on amendments to certain acts, based on Seveso III directive (2012/18/EU).

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

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

DSL : Listed

IECSC : Listed

KECI : Listed

PICCS : Listed

TSCA : Listed

TCSI : Listed

NZIoC : Listed

ENCS : Listed

15.2 Chemical safety assessment

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

SECTION 16: Other information

Full text of other abbreviations

EU HSPA : OEL based on European Hydrocarbon Solvents Producers

(CEFIC-HSPA) methodology.

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

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by

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

Further information

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

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 persis-

tence, 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 expo-

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

Sources of key data used to compile the Safety Data

Sheet

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

Classification of the mixture: Classification procedure:

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

dence determination.

STOT SE 3 Expert judgement and weight of evi-H336

dence determination.

Expert judgement and weight of evi-Aquatic Chronic 2 H411

dence determination.

Identified Uses according to the Use Descriptor System

Uses - Worker

Title Water treatment chemicals- Professional

Uses - Worker

Title Water treatment chemicals- Industrial

Uses - Worker

Title Use in laboratories- Professional

Uses - Worker

Title Use in laboratories- Industrial

Uses - Worker

Functional Fluids- Professional Title

Uses - Worker

Functional Fluids- Industrial Title

Uses - Worker

Title Use as a fuel- Professional

Uses - Worker

Title Use as a fuel- Industrial

Uses - Worker

Title Use in Agrochemicals uses- Professional

Uses - Worker

Title Use as binders and release agents- Professional

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Uses - Worker

Title : Use as binders and release agents- Industrial

Uses - Worker

Title : Metal working fluids / rolling oils- Professional

Uses - Worker

Title : Metal working fluids / rolling oils- Industrial

Uses - Worker

Title : Lubricants- ProfessionalHigh Environmental Release

Uses - Worker

Title : Lubricants- ProfessionalLow Environmental Release

Uses - Worker

Title : Lubricants- Industrial

Uses - Worker

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

Industrial

Uses - Worker

Title : Use in Cleaning Agents- Professional

Uses - Worker

Title : Use in Cleaning Agents- Industrial

Uses - Worker

Title : Uses in Coatings- Professional

Uses - Worker

Title : Uses in Coatings- Industrial

Uses - Worker

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

trial

Uses - Worker

Title : Distribution of substance- Industrial

Uses - Worker

Title : Manufacture of substance- Industrial

Identified Uses according to the Use Descriptor System

Uses - Consumer

Title : Uses in Coatings

- Consumer

Uses - Consumer

Title : Use in Cleaning Agents

- Consumer

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Uses - Consumer

Title : Lubricants

- Consumer

Low Environmental Release

Uses - Consumer

Title : Lubricants

- Consumer

High Environmental Release

Uses - Consumer

Title : Use in Agrochemicals uses

- Consumer

Uses - Consumer

Title : Use as a fuel

- Consumer

Uses - Consumer

Title : Functional Fluids

- Consumer

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

SK / EN

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Exposure Scenario - Worker

| 300000000727 | OTNO! |
|------------------|---|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Water treatment chemicals- Professional |
| Use Descriptor | Sector of Use: SU22 Process Categories: PROC 1, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 13 Environmental Release Categories: ERC8f, ESVOC SpERC 8.22b.v1 |
| Scope of process | Covers the use of the substance for the treatment of water in open and closed systems. |

| SECTION 2 | OPERATIONAL CONDITIONS AND RIS | K MANAGEMENT |
|--|---|--------------------|
| Section 2.1 | Control of Worker Exposure | |
| Product Characteristics | • | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |) |
| Concentration of the Sub- | Covers use of substance/product up to 10 | 00% (unless stated |
| stance in Mixture/Article | differently)., | |
| Frequency and Duration of | | |
| | 8 hours (unless stated differently). | |
| Other Operational Conditio | | |
| Assumes a good basic stand | an 20°C above ambient temperature (unlessard of occupational hygiene is implemented | |
| Contributing Scenarios | Risk Management Measures | |
| Drum/batch transfersDedicated facilityPROC8b | No other specific measures identified. | |
| General exposures (closed systems)PROC3 | No other specific measures identified. | |
| General exposures (open systems)PROC4 | No other specific measures identified. | |
| Pouring from small containersPROC13 | No other specific measures identified. | |
| Equipment maintenance- PROC8a | No other specific measures identified. | |
| Storage.PROC1 | Store substance within a closed system. | |
| Section 2.2 | Control of Environmental Exposure | |
| Substance is complex UVCB | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used | in region: | 0,1 |
| Regional use tonnage (tonne | | 1,0E+02 |
| Fraction of Regional tonnage | used locally: | 1,5E-02 |
| Annual site tonnage (tonnes/ | | 1,5 |

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| Maximum daily site tonnage (kg/day): Frequency and Duration of Use Continuous release. Emission Days (days/year): Servironmental 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): OTECHNICAL CONDITIONS AND DEVELOPMENT OF TECHNICAL CONDITIONS AND DEVELOPMENT OF TECHNICAL CONDITIONS AND DEVELOPMENT OF TECHNICAL CONDITIONS AND MEASURES AND DEVELOPMENT OF TECHNICAL CONDITIONS AND DEVELOPMENT OF TECHNICAL CON | elease |
|--|----------------|
| Continuous release. Emission Days (days/year): Servironmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: 100 Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): OTECHNICAL CONDITION OF TECHNICAL CONDIT | elease |
| Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): OTechnical conditions and measures at process level (source) to prevent release estimates used. Technical onsite conditions and measures to reduce or limit discharges, and the process in the process release estimates used. | elease |
| Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): OTechnical conditions and measures at process level (source) to prevent release estimates used. Technical onsite conditions and measures to reduce or limit discharges, and the solution of | elease |
| Local freshwater dilution factor: Local marine water dilution factor: Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): O Technical conditions and measures at process level (source) to prevent recommon practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, and the state of the st | elease |
| 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): O Technical conditions and measures at process level (source) to prevent recommon practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, and the state of the state | elease |
| 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): O Technical conditions and measures at process level (source) to prevent recommon practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, and the state of the st | elease |
| Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): O Technical conditions and measures at process level (source) to prevent recommon practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, as | elease |
| Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): O Technical conditions and measures at process level (source) to prevent recommon practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, a | elease |
| RMM): Release fraction to soil from process (initial release prior to RMM): O Technical conditions and measures at process level (source) to prevent recommon practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, a | |
| Technical conditions and measures at process level (source) to prevent re Common practices vary across sites thus conservative process re- lease estimates used. Technical onsite conditions and measures to reduce or limit discharges, a | |
| Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, a | |
| lease estimates used. Technical onsite conditions and measures to reduce or limit discharges, a | ir omic |
| | ir omic |
| | an eiilis- |
| Sions and releases to soil | |
| Risk from environmental exposure is driven by soil. | |
| If discharging to domestic sewage treatment plant, no onsite | |
| wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) 0 | |
| Treat onsite wastewater (prior to receiving water discharge) to provide 64,3 | |
| the required removal efficiency of >= (%) | |
| If discharging to domestic sewage treatment plant, no secondary 0 | |
| wastewater treatment required. | |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| Conditions and Measures related to municipal sewage treatment plant | |
| Estimated substance removal from wastewater via domestic sewage 94,6 | |
| treatment (%) | |
| Total efficiency of removal from wastewater after onsite and offsite 94,6 | |
| (domestic treatment plant) RMMs (%) | |
| Maximum allowable site tonnage (MSafe) based on release following 26 | |
| total wastewater treatment removal (kg/d) | |
| Assumed domestic sewage treatment plant flow (m3/d) 2,0E+ | |
| Conditions and Measures related to external treatment of waste for dispos | |
| External treatment and disposal of waste should comply with applicable local ar regulations. | nd/or regional |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable local ar regulations. | ıd/or regional |

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

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Section 3.2 - Environment

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

| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE |
|-----------|---------------------------------------|
| | EXPOSURE SCENARIO |

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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

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Exposure Scenario - Worker

| Expeditio Containe Trontoi | |
|----------------------------|---|
| 3000000726 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Water treatment chemicals- Industrial |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 13 Environmental Release Categories: ERC3, ERC4, ESVOC SpERC 3.22a.v1 |
| Scope of process | Covers the use of the substance for the treatment of water at industrial facilities in open and closed systems. |

| SECTION 2 | OPERATIONAL CONDITIONS AND RIS MEASURES | K MANAGEMENT |
|--|---|--------------------|
| Section 2.1 | Control of Worker Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STF | |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 10 differently)., | 00% (unless stated |
| Frequency and Duration of | | |
| | 8 hours (unless stated differently). | |
| Other Operational Conditio | ns affecting Exposure | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | | |
| Contributing Scenarios | Risk Management Measures | |
| Bulk transfersUse in contained systemsPROC2 | No other specific measures identified. | |
| Drum/batch transfersDedicated facilityPROC8b | No other specific measures identified. | |
| General exposures (closed systems)PROC3 | No other specific measures identified. | |
| General exposures (open systems)PROC4 | No other specific measures identified. | |
| Pouring from small containersPROC13 | No other specific measures identified. | |
| Equipment maintenance- PROC8a | No other specific measures identified. | |
| Storage.PROC1 | Store substance within a closed system. | |
| Section 2.2 | Control of Environmental Exposure | |
| Substance is complex UVCB | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used | | 0,1 |
| Regional use tonnage (tonne | s/year): | 1,1E+02 |

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| Fraction of Regional tonnage used locally: | 2,7E-01 |
|--|-----------------------|
| Annual site tonnage (tonnes/year): | 3,0E+01 |
| Maximum daily site tonnage (kg/day): | 1,0E+02 |
| Frequency and Duration of Use | |
| Continuous release. | |
| Emission Days (days/year): | 300 |
| Environmental factors not influenced by risk management | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| Other Operational Conditions affecting Environmental Exposure | |
| Release fraction to air from process (initial release prior to RMM): | 5,0E-02 |
| Release fraction to wastewater from process (initial release prior to RMM): | 0,95 |
| Release fraction to soil from process (initial release prior to RMM): | 0 |
| Technical conditions and measures at process level (source) to pro | event release |
| Common practices vary across sites thus conservative process release estimates used. | |
| Technical onsite conditions and measures to reduce or limit discha | arges, air emis- |
| sions and releases to soil | a. g. c., a cc |
| Risk from environmental exposure is driven by freshwater sediment. | |
| If discharging to domestic sewage treatment plant, additional onsite | |
| wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide | 98,5 |
| the required removal efficiency of >= (%) | |
| If discharging to domestic sewage treatment plant, provide the re- | 71,9 |
| quired onsite wastewater removal efficiency of (%) | |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| | |
| Conditions and Measures related to municipal sewage treatment p | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 94,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 98,5 |
| Maximum allowable site tonnage (MSafe) based on release following | 1,0E+02 |
| total wastewater treatment removal (kg/d) | 1,02102 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste for | , |
| External treatment and disposal of waste should comply with applicable regulations. | • |
| | |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable regulations. | local and/or regional |
| | |

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

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indicated.

Section 3.2 - Environment

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

| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE |
|-----------|---------------------------------------|
| | EXPOSURE SCENARIO |

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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

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Exposure Scenario - Worker

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

| SECTION 2 | OPERATIONAL CONDITIONS AND RIS | SK MANAGEMENT |
|---|--|------------------------|
| Section 2.1 | Control of Worker Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STF |) |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 1 differently)., | 00% (unless stated |
| Frequency and Duration of | | |
| Covers daily exposures up to | 8 hours (unless stated differently). | |
| Other Operational Conditio | | 1 |
| | in 20°C above ambient temperature (unles | s stated differently). |
| Assumes a good basic standard of occupational hygiene is implemented. | | |
| Contributing Scenarios | Risk Management Measures | |
| Laboratory activi- tiesPROC15 | No other specific measures identified. | |
| CleaningPROC10 | No other specific measures identified. | |
| Section 2.2 | Control of Environmental Exposure | |
| Substance is complex UVCB | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | • |
| Fraction of EU tonnage used | in region: | 0,1 |
| Regional use tonnage (tonne | s/year): | 1,0E-01 |
| Fraction of Regional tonnage | used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/ | | 5,0E-05 |
| Maximum daily site tonnage (| | 1,4E-04 |
| Frequency and Duration of | Use | |
| Continuous release. | | |
| Emission Days (days/year): 365 | | 365 |
| | nfluenced by risk management | |
| Local freshwater dilution factor | | 10 |
| Local marine water dilution fa | | 100 |
| Other Operational Conditio | ns affecting Environmental Exposure | |

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| Release fraction to air from process (initial release prior to RMM): | 0,5 |
|---|----------------------|
| Release fraction to wastewater from process (initial release prior to RMM): | 0,5 |
| Release fraction to soil from process (initial release prior to RMM): | 0 |
| Technical conditions and measures at process level (source) to pr | event release |
| Common practices vary across sites thus conservative process re- | |
| lease estimates used. | |
| Technical onsite conditions and measures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide | 0 |
| the required removal efficiency of >= (%) | |
| If discharging to domestic sewage treatment plant, no secondary | 0 |
| wastewater treatment required. | |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 94,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 94,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 6,8E-02 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste fo | r disposal |
| External treatment and disposal of waste should comply with applicable regulations. | |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable regulations. | local and/or regiona |

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 - Environment

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

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

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

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

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Exposure Scenario - Worker

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

| SECTION 2 | OPERATIONAL CONDITIONS AND F | RISK MANAGEMENT |
|---|---|---------------------|
| Section 2.1 | Control of Worker Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at S | TP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to differently)., | 100% (unless stated |
| Frequency and Duration of | | |
| | 8 hours (unless stated differently). | |
| Other Operational Condition | | |
| | an 20°C above ambient temperature (unlard of occupational hygiene is implemen | |
| Contributing Scenarios | Risk Management Measures | |
| Laboratory activitiesPROC15 | No other specific measures identified. | |
| CleaningPROC10 | No other specific measures identified. | |
| Section 2.2 | Control of Environmental Exposure | |
| Substance is complex UVCE | b. | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in region: | | 0,1 |
| Regional use tonnage (tonne | es/year): | 2,0E-01 |
| Fraction of Regional tonnage used locally: | | 1 |
| Annual site tonnage (tonnes/year): | | 2,0E-01 |
| Maximum daily site tonnage (kg/day): | | 1,0E+01 |
| Frequency and Duration of | Use | |
| Continuous release. | | |
| Emission Days (days/year): | | 20 |
| Environmental factors not | influenced by risk management | |
| Local freshwater dilution factor: | | 10 |
| Local marine water dilution factor: | | 100 |
| Other Operational Condition | ons affecting Environmental Exposure | |
| | process (initial release prior to RMM): | 2,5E-02 |

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

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

Section 3.2 - Environment

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

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

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Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

| | Exposure deciratio - Worker | | |
|------------------|--|--|--|
| 30000000723 | | | |
| | | | |
| SECTION 1 | EXPOSURE SCENARIO TITLE | | |
| Title | Functional Fluids- Professional | | |
| Use Descriptor | Sector of Use: SU22 | | |
| | Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, | | |
| | PROC 9, PROC 20 | | |
| | Environmental Release Categories: ERC9a, ERC9b, | | |
| | ESVOC SpERC 9.13b.v1 | | |
| | · | | |
| Scope of process | Use as functional fluids e.g. cable oils, transfer oils, coolants, | | |
| | insulators, refrigerants, hydraulic fluids in professional equip- | | |
| | ment including maintenance and related material transfers. | | |
| | | | |

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

Assumes a good basic standard of occupational hygiene is implemented.

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

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| ClesPROC9 | | | | |
|--|--|--------|---------------------------------------|------------------|
| Section 2.2 Control of Environmental Exposure Substance is complex UVCB. Predominantly hydrophobic. Predominantly hydrophobic. 0,1 Regional use tonnage used in region: 1,0 Regional use tonnage (tonnes/year): 1 Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 1,4E-03 Maximum daily site tonnage (kg/day): 1,4E-03 Frequency and Duration of Use Continuous release. 6 Environmental factors not influenced by risk management Local freshwater dilution factor: 10 Local marine water dilution factor: 10 Local marine water dilution factor: 10 Local marine water dilution factor: 10 Release fraction to air from process (initial release prior to RMM): 5,0E-02 RMM): Release fraction to air from process (initial release prior to RMM): 2,5E-02 RMM): Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,6E-02 Release fraction to soil from process (initial release prior to RMM): 2,6E-02 Release fraction to soil from process (initial release prior to RMM): 2,6E-02 Release fraction to soil from process (initial release prior to RMM): 2,6E-02 Release fraction to soil from process (initial releas | clesPROC9 | | | |
| Section 2.2 Control of Environmental Exposure Substance is complex UVCB. Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: 0,1 Regional use tonnage (tonnes/year): 1 Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 5,0E-04 Maximum daily site tonnage (kg/day): 1,4E-03 Frequency and Duration of Use Continuous release. Emission Days (days/year): 365 Environmental factors not influenced by risk management Local freshwater dilution factor: 100 Other Operational Conditions affecting Environmental Exposure Release fraction to alir from process (initial release prior to RMM): 5,0E-02 Release fraction to wastewater from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical onice conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) 0 Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) [If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant plant (%) [94,6] Total efficiency of removal from wastewater via domestic sewage treatment plant p | | | No other specific measures identified | .k |
| Substance is complex UVCB. Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: 0,1 Regional use tonnage (tonnes/year): 1 Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 5,0E-04 Annual site tonnage (tonnes/year): 5,0E-04 Maximum daily site tonnage (kg/day): 1,4E-03 Frequency and Duration of Use Continuous release. Emission Days (days/year): 385 Environmental factors not influenced by risk management Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): 5,0E-02 Release fraction to wastewater from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Treat onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Treat onsite wastewater (prior to receiving water discharge) to provide the required memoval efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant (%) Total efficiency of removal from wastewater via domestic sewage p4,6 treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03 Conditions and Measures re | Storage.PROC1PROC2 | | Store substance within a closed syst | em. |
| Substance is complex UVCB. Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): 1 | Section 2.2 | Со | ntrol of Environmental Exposure | |
| Predominantly hydrophobic. Amounts Used Fraction of EU tonnage used in region: 0,1 | Substance is complex UVCB. | | • | |
| Amounts Used Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: Frequency and puration of Use Continuous release. Emission Days (days/year): Frequency and Duration of Use Continuous release. Emission Days (days/year): Frequency and puration of Use Continuous release. Emission Days (days/year): Frequency and puration of Use Continuous release. Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: 10 Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Frequency across (initial release prior to RMM): Frequency across sites thus conservative process release estimates used. Frechical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Frechical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Freat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03 Condi | | | | |
| Regional use tonnage (tonnes/year): 1 Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 5,0E-04 Maximum daily site tonnage (kg/day): 1,4E-03 Trequency and Duration of Use Somethia of Use | | | | |
| Regional use tonnage (tonnes/year): 1 Fraction of Regional tonnage used locally: 5,0E-04 Annual site tonnage (tonnes/year): 5,0E-04 Maximum daily site tonnage (kg/day): 1,4E-03 Trequency and Duration of Use Somethia of Use | Fraction of EU tonnage used | in re | gion: | 0,1 |
| Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year): 5,0E-04 Maximum daily site tonnage (kg/day): 7,0E-04 Maximum daily site tonnage (kg/day): 7,4E-03 Frequency and Duration of Use Continuous release. Emission Days (days/year): 8,65 Environmental factors not influenced by risk management Local freshwater dilution factor: 100 Cher Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): 7,5E-02 Release fraction to soil from process (initial release prior to RMM): 8,5E-02 Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03 Conditions and Measures related to external treatment of waste for disposal | <u> </u> | | <u> </u> | 1 |
| Annual site tonnage (tonnes/year): Maximum daily site tonnage (kg/day): 1,4E-03 Frequency and Duration of Use Continuous release. Emission Days (days/year): 365 Environmental factors not influenced by risk management Local freshwater dilution factor: 10 Local marine water dilution factor: 100 Other Operational Conditions affecting Environmental Exposure Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment plant efficiency of removal from wastewater related on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03 Conditions and Measures related to external treatment of waste for disposal | | | | 5.0E-04 |
| Maximum daily site tonnage (kg/day): 1,4E-03 | | | | |
| Continuous release. | Maximum daily site tonnage (| kg/d | ay): | 1,4E-03 |
| Continuous release. Emission Days (days/year): Environmental factors not influenced by risk management Local freshwater dilution factor: Local marine water dilution factor: Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03 Conditions and Measures related to external treatmen | | | | |
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| 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): Z,5E-02 Redease fraction to soil from process (initial release prior to RMM): Z,5E-02 Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Z,0E+03 Conditions and Measures related to external treatment of waste for disposal | Emission Days (days/year): | | | 365 |
| Local marine water dilution factor: | | influ | enced by risk management | |
| Other Operational Conditions affecting Environmental Exposure | Local freshwater dilution factor | or: | | 10 |
| Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to 2,5E-02 RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): 2,5E-02 Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical conditions and measures to reduce or limit discharges, air emissions and release to soil Risk from environmental exposure is driven by freshwater. No wastewater reatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03 Conditions and Measures related to external treatment of waste for disposal | Local marine water dilution fa | ctor: | | 100 |
| Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Z,5E-02 Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | Other Operational Condition | ns a | ffecting Environmental Exposure | |
| RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): 7 | Release fraction to air from p | roce | ss (initial release prior to RMM): | 5,0E-02 |
| Release fraction to soil from process (initial release prior to RMM): 7. Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03 Conditions and Measures related to external treatment of waste for disposal | | er fro | om process (initial release prior to | 2,5E-02 |
| Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process release estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03 Conditions and Measures related to external treatment of waste for disposal | | oroce | ess (initial release prior to RMM): | 2,5E-02 |
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| Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | Common practices vary acros | | | |
| Risk from environmental exposure is driven by freshwater. No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | | and | d measures to reduce or limit disch | arges, air emis- |
| No wastewater treatment required. Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | | osure | e is driven by freshwater. | |
| Treat air emission to provide a typical removal efficiency of (%) Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | | | | |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | | | | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | | | | 0 |
| Wastewater treatment required. Organisational measures to prevent/limit release from site Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | the required removal efficience | cy 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 plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | If discharging to domestic sev | wage | treatment plant, no secondary | 0 |
| Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | | | | |
| Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | | | | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | | | | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | Conditions and Measures re | elate | ed to municipal sewage treatment p | lant |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | Estimated substance removal from wastewater via domestic sewage | | | |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal | Total efficiency of removal from wastewater after onsite and offsite | | | 94,6 |
| Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03 Conditions and Measures related to external treatment of waste for disposal | Maximum allowable site tonnage (MSafe) based on release following | | | 6,8E-01 |
| Conditions and Measures related to external treatment of waste for disposal | | | | 2.0F+03 |
| | | | | |
| | | | | |

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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 3.1 - Health

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

Section 3.2 - Environment

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

| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE |
|-----------|---------------------------------------|
| | EXPOSIBE SCENARIO |

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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

| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES |
|---|--|
| Section 2.1 | Control of Worker Exposure |
| Product Characteristics | Total of Frontier Exposure |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| Frequency and Duration of | Use |
| Covers daily exposures up to | 8 hours (unless stated differently). |
| Other Operational Conditio | ns affecting Exposure |
| | in 20°C above ambient temperature (unless stated differently). ard of occupational hygiene is implemented. |
| Contributing Scenarios | Risk Management Measures |
| Bulk transfers(closed systems)PROC1PROC2 | No other specific measures identified. |
| Drum/batch transfer- sPROC8b | No other specific measures identified. |
| Filling of arti- cles/equipment(closed sys- tems)PROC9 | No other specific measures identified. |
| Filling/ preparation of equipment from drums or containers.PROC8a | No other specific measures identified. |
| General exposures (closed systems)PROC2 | No other specific measures identified. |
| General exposures (open systems)PROC4 | No other specific measures identified. |
| Remanufacture of reject articlesPROC9 | No other specific measures identified. |
| Equipment maintenance- PROC8a | No other specific measures identified. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

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| Section 2.2 | Control of Environmental Exposure | |
|----------------------------------|---|-----------------------|
| Substance is complex UVCB | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | • |
| Fraction of EU tonnage used | 0,1 | |
| Regional use tonnage (tonne | | 1 |
| Fraction of Regional tonnage | | 1 |
| Annual site tonnage (tonnes/ | | 3,0 |
| Maximum daily site tonnage | | 5,0E+01 |
| Frequency and Duration of | | - / |
| Continuous release. | | |
| Emission Days (days/year): | | 20 |
| | influenced by risk management | 1 = 0 |
| Local freshwater dilution fact | | 10 |
| Local marine water dilution fa | | 100 |
| | ns affecting Environmental Exposure | 100 |
| | rocess (initial release prior to RMM): | 5,0E-03 |
| | er from process (initial release prior to | 3,0E-05 |
| RMM): | or from process (initial release prior to | 0,02 00 |
| , | process (initial release prior to RMM): | 1,0E-03 |
| | neasures at process level (source) to pro- | |
| | ss sites thus conservative process re- | |
| lease estimates used. | oo dhoo thad donedrative process to | |
| | s and measures to reduce or limit disch | arges air emis- |
| sions and releases to soil | | argoo, arronno |
| | osure is driven by freshwater. | |
| | olved substance to or recover from onsite | |
| wastewater. | | |
| No wastewater treatment req | uired. | |
| | a typical removal efficiency of (%) | 0 |
| | or to receiving water discharge) to provide | 0 |
| the required removal efficience | | |
| | wage treatment plant, no secondary | 0 |
| wastewater treatment require | | |
| Organisational measures to | prevent/limit release from site | |
| Do not apply industrial sludge | e to natural soils. | |
| Sludge should be incinerated | | |
| | | |
| Conditions and Measures r | elated to municipal sewage treatment p | lant |
| Estimated substance remova | Il from wastewater via domestic sewage | 94,6 |
| treatment (%) | | |
| Total efficiency of removal from | om wastewater after onsite and offsite | 94,6 |
| (domestic treatment plant) R | | |
| Maximum allowable site tonn | 2,4E+04 | |
| total wastewater treatment re | | |
| Assumed domestic sewage t | 2,0E+03 | |
| | elated to external treatment of waste for | |
| | sal of waste should comply with applicable | local and/or regional |
| regulations. | | |
| | | |

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Conditions and measures related to external recovery of waste

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

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE |
|-----------|---------------------------------------|
| | EXPOSURE SCENARIO |

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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

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

| Contributing Scenarios | Ris | sk Management Measures | |
|---|-----|---|--|
| Bulk transfersDedicated facili- tyPROC8b | | No other specific measures identified. | |
| Drum/batch transfersDedicate facilityPROC8b | ed | No other specific measures identified. | |
| Refueling.Dedicated facili- tyPROC8b | | No other specific measures identified. | |
| General exposures (closed systems)PROC1PROC2PRO | СЗ | No other specific measures identified. | |
| Use as a fuel(closed systems)PROC16 | | No other specific measures identified. | |
| Equipment cleaning and maintenancePROC8a | | No other specific measures identified. | |
| Storage.PROC1 | | Store substance within a closed system. | |

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

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| Regional use tonnage (tonnes/year): | 2,4E+02 |
|---|------------------|
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 1,2E-01 |
| Maximum daily site tonnage (kg/day): | 3,3E-01 |
| Frequency and Duration of Use | , |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| Environmental factors not influenced by risk management | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| Other Operational Conditions affecting Environmental Exposure | |
| Release fraction to air from process (initial release prior to RMM): | 1,0E-04 |
| Release fraction to wastewater from process (initial release prior to RMM): | 1,0E-05 |
| Release fraction to soil from process (initial release prior to RMM): | 1,0E-05 |
| Technical conditions and measures at process level (source) to pr | event release |
| Common practices vary across sites thus conservative process re- lease estimates used. | |
| Technical onsite conditions and measures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | J, |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide | 0 |
| the required removal efficiency of >= (%) | |
| If discharging to domestic sewage treatment plant, no secondary | 0 |
| wastewater treatment required. | |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Estimated substance removal from wastewater via domestic sewage | 94,6 |
| treatment (%) | - /- |
| Total efficiency of removal from wastewater after onsite and offsite | 94,6 |
| (domestic treatment plant) RMMs (%) | , - |
| Maximum allowable site tonnage (MSafe) based on release following | 1,6E+02 |
| total wastewater treatment removal (kg/d) | , |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste for disposal | |
| Combustion emissions limited by required exhaust emission controls. | - 1 |
| Waste combustion emissions considered in regional exposure assessm | nent. |
| Conditions and measures related to external recovery of waste | |
| This substance is consumed during use and no waste of substance is g | enerated |

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

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Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 -Environment

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

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

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

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| 30000000714 | |
|------------------|---|
| 30000000714 | |
| 070710114 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use as a fuel- Industrial |
| Use Descriptor | Sector of Use: SU3 |
| · | Process Categories : PROC 1, PROC 2, PROC 3, PROC 8a, PROC 8b, PROC 16 |
| | Environmental Release Categories : ERC7, ESVOC SpERC 7.12a.v1 |
| Scope of process | Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste. |

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

| Contributing Scenarios | Ris | sk Management Measures | |
|---|-----|---|--|
| Bulk transfersDedicated facili- tyPROC8b | - | No other specific measures identified. | |
| Drum/batch transfersDedicate facilityPROC8b | ed | No other specific measures identified. | |
| General exposures (closed systems)PROC1PROC2PRO | C3 | No other specific measures identified. | |
| Use as a fuel(closed systems)PROC16 | | No other specific measures identified. | |
| Equipment cleaning and maintenancePROC8a | | No other specific measures identified. | |
| Storage.PROC1PROC2 | | Store substance within a closed system. | |

| Section 2.2 | Control of Environmental Exposure | | |
|---|-----------------------------------|---------|--|
| Substance is complex UVCB. | Substance is complex UVCB. | | |
| Predominantly hydrophobic. | Predominantly hydrophobic. | | |
| Amounts Used | | | |
| Fraction of EU tonnage used in region: 0,1 | | 0,1 | |
| Regional use tonnage (tonnes/year): 1,6E+02 | | 1,6E+02 | |
| Fraction of Regional tonnage used locally: | | 1 | |

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

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

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Section 3.2 - Environment

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

| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE |
|-----------|---------------------------------------|
| | EXPOSURE SCENARIO |

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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| 30000000711 | |
|------------------|---|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use in Agrochemicals uses- Professional |
| Use Descriptor | Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 4, PROC 8a, PROC 8b, PROC 11, PROC 13 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.11a.v1 |
| Scope of process | Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal. |

| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES | | |
|--|---|--|--|
| Section 2.1 | Control of Worker Exposure | | |
| Product Characteristics | Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP | | |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., | | |
| Frequency and Duration of | Use | | |
| Covers daily exposures up to | 8 hours (unless stated differently). | | |
| Other Operational Conditio | | | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | | | |
| Contributing Scenarios | Risk Management Measures | | |
| Transfer from/pouring from containersPROC8a | No other specific measures identified. | | |
| Mixing in contain- ers.PROC4 | No other specific measures identified. | | |
| Spraying/ fogging by manual applicationPROC11 | Wear a respirator conforming to EN140 with Type A filter or better. | | |
| Spraying/ fogging by machine applicationPROC11 | Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20. | | |
| Ad hoc manual application via trigger sprays, dipping, etc.PROC13 | No other specific measures identified. | | |
| Equipment cleaning and maintenancePROC8a | No other specific measures identified. | | |
| Storage.PROC1PROC2 | Store substance within a closed system. | | |
| Section 2.2 | Control of Environmental Exposure | | |
| Substance is complex UVCB. | | | |

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| Predominantly hydrophobic. | |
|---|-----------------------|
| Amounts Used | |
| | 0.4 |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 9,0E+02 |
| Fraction of Regional tonnage used locally: | 2,0E-03 |
| Annual site tonnage (tonnes/year): | 1,8 |
| Maximum daily site tonnage (kg/day): | 4,9 |
| Frequency and Duration of Use | 1 |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| Environmental factors not influenced by risk management | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| Other Operational Conditions affecting Environmental Exposure | |
| Release fraction to air from process (initial release prior to RMM): | 0,9 |
| Release fraction to wastewater from process (initial release prior to | 1,0E-02 |
| RMM): | , |
| Release fraction to soil from process (initial release prior to RMM): | 9,0E-02 |
| Technical conditions and measures at process level (source) to pr | event release |
| Common practices vary across sites thus conservative process re- | |
| lease estimates used. | |
| Technical onsite conditions and measures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | J , |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide | 0 |
| the required removal efficiency of >= (%) | |
| If discharging to domestic sewage treatment plant, no secondary | 0 |
| wastewater treatment required. | |
| Organisational measures to prevent/limit release from site | <u> </u> |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| g | |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Estimated substance removal from wastewater via domestic sewage | 94,6 |
| treatment (%) | ,- |
| Total efficiency of removal from wastewater after onsite and offsite | 94,6 |
| (domestic treatment plant) RMMs (%) | 0 .,0 |
| Maximum allowable site tonnage (MSafe) based on release following | 1,4E+03 |
| total wastewater treatment removal (kg/d) | 1,12.00 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste for | |
| External treatment and disposal of waste should comply with applicable | |
| regulations. | J |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable | local and/or regional |
| regulations. | - |
| | |

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| SECTION 3 | EXPOSURE ESTIMATION |
|-----------|----------------------------|
| | |

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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| Exposure occitano Worker | | | |
|--------------------------|--|--|--|
| 30000000706 | | | |
| SECTION 1 | EXPOSURE SCENARIO TITLE | | |
| Title | Use as binders and release agents- Professional | | |
| Use Descriptor | Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 6, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 14 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.10b.v1 | | |
| Scope of process | Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste. | | |

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

| Contributing Scenarios | Risk Management Measures |
|--|--|
| Material transfers(closed systems)PROC1PROC2PROC3 | No other specific measures identified. |
| Drum/batch transfersPROC8b | No other specific measures identified. |
| Mixing operations (closed 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 general or controlled ventilation (5 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours |
| SprayingMachinePROC11 | Minimise exposure by extracted full enclosure for the operation or equipment. |

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| T | | | |
|--|--|---------------------------|--|
| SprayingManualPROC11 | Carry out in a vented booth or extract | cted enclosure. | |
| | , or: | 4.40 U. T. A. (II) | |
| | Wear a respirator conforming to EN | 140 with Type A filter or | |
| | better. | | |
| ManualRolling, Brush- | No other specific measures identified | | |
| ingPROC10 | The early openie measures identified | u. | |
| Storage.PROC1PROC2 | Store substance within a closed syst | tem. | |
| | - | - | |
| Section 2.2 | Control of Environmental Exposure | | |
| Substance is complex UVCB. | | | |
| Predominantly hydrophobic. | | | |
| Amounts Used | | | |
| Fraction of EU tonnage used | | 0,1 | |
| Regional use tonnage (tonnes | | 100 | |
| Fraction of Regional tonnage | used locally: | 5,0E-04 | |
| Annual site tonnage (tonnes/y | /ear): | 5,0E-02 | |
| Maximum daily site tonnage (| kg/day): | 0,14 | |
| Frequency and Duration of | Use | | |
| Continuous release. | | | |
| Emission Days (days/year): | | 365 | |
| | nfluenced by risk management | | |
| Local freshwater dilution factor | or: | 10 | |
| Local marine water dilution fa | | 100 | |
| | ns affecting Environmental Exposure | | |
| Release fraction to air from pr | 0,95 | | |
| Release fraction to wastewate RMM): | 2,5E-02 | | |
| Release fraction to soil from p | 2,5E-02 | | |
| Technical conditions and measures at process level (source) to prevent release | | | |
| Common practices vary acros | ss sites thus conservative process re- | | |
| lease estimates used. | | | |
| | and measures to reduce or limit disch | arges, air emis- | |
| sions and releases to soil | | | |
| Risk from environmental expo | | | |
| No wastewater treatment requ | | | |
| | a typical removal efficiency of (%) | 0 | |
| | r to receiving water discharge) to provide | 0 | |
| the required removal efficience | | | |
| | vage treatment plant, no secondary | 0 | |
| wastewater treatment require | | | |
| | prevent/limit release from site | | |
| Do not apply industrial sludge | | | |
| Sludge should be incinerated, | , contained or reciaimed. | | |
| Conditions and Measures re | elated to municipal sewage treatment p | lant | |
| | from wastewater via domestic sewage | 94,6 | |
| treatment (%) | <u> </u> | | |
| Total efficiency of removal fro | 94,6 | | |
| (domestic treatment plant) RN | | | |
| Maximum allowable site tonna | 65 | | |

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| total wastewater treatment removal (kg/d) | |
|---|---------|
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| | |

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

indicated.

Section 3.2 - Environment

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

| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE |
|-----------|---------------------------------------|
| | EXPOSURE SCENARIO |

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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

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

| Contributing Scenarios | Risk I | Management Measures | |
|--|--------|--|----|
| Material transfers(closed systems)PROC1PROC2PROC3 | N | lo other specific measures identified. | |
| Drum/batch transfersPROC8b | N | o other specific measures identified. | |
| Mixing operations (closed systems)PROC3 | N | lo other specific measures identified. | |
| Mixing operations (open systems)PROC4 | N | o other specific measures identified. | |
| Mold formingPROC14 | N | o other specific measures identified. | |
| Casting operations(open systems)Operation is carried out elevated temperature (> 20°C above ambient temperature). Aerosol generation due televated process temperature PROC6 | at to | rovide a good standard of general or controlled ventilation o 15 air changes per hour). | (5 |
| SprayingMachinePROC7 | | linimise exposure by partial enclosure of the operation or quipment and provide extract ventilation at openings. | |

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| SprayingManualPROC7 | Carry out in a vented booth or extract | ted enclosure. | |
|--|---|-------------------------|--|
| | , or: | | |
| | Avoid carrying out activities involving | g exposure for more tha | |
| | 4 hours | | |
| ManualRolling, BrushingPROC7 | No other specific measures identified | d. | |
| Dipping, immersion and pouringPROC13 | No other specific measures identified | d. | |
| Storage.PROC1PROC2 | Store substance within a closed syst | em. | |
| Section 2.2 Co | ntrol of Environmental Exposure | | |
| Substance is complex UVCB. | | | |
| Predominantly hydrophobic. | | | |
| Amounts Used | | | |
| Fraction of EU tonnage used in re | gion: | 0,1 | |
| Regional use tonnage (tonnes/yea | ar): | 9,6E+01 | |
| Fraction of Regional tonnage use | | 1 | |
| Annual site tonnage (tonnes/year) |): | 9,6E+01 | |
| Maximum daily site tonnage (kg/d | ay): | 4,8E+03 | |
| Frequency and Duration of Use | | | |
| Continuous release. | | | |
| Emission Days (days/year): | | 20 | |
| Environmental factors not influ | enced by risk management | | |
| Local freshwater dilution factor: | | 10 | |
| ocal marine water dilution factor: | | 100 | |
| | ffecting Environmental Exposure | | |
| | lease fraction to air from process (initial release prior to RMM): 1,0 | | |
| Release fraction to wastewater from | 3,0E-06 | | |
| RMM): | | | |
| Release fraction to soil from proce | | 0 | |
| | ures at process level (source) to pr | event release | |
| Common practices vary across si | tes thus conservative process re- | | |
| lease estimates used. | Lancaca de la lancación Paris. | | |
| sions and releases to soil | d measures to reduce or limit disch | arges, air emis- | |
| Risk from environmental exposure | | | |
| Prevent discharge of undissolved substance to or recover from onsite | | | |
| wastewater. | | | |
| No wastewater treatment required | | | |
| Treat air emission to provide a 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 | e treatment plant, no secondary | 0 | |
| wastewater treatment required. | | | |
| Organisational measures to pre | | | |
| Do not apply industrial sludge to natural soils. | | | |
| Sludge should be incinerated, cor | italited of recialitied. | | |
| Conditions and Measures relate | ed to municipal sewage treatment p | lant | |
| | | - | |

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| Estimated substance removal from wastewater via domestic sewage | 94,6 |
|--|---------|
| treatment (%) | , |
| | |
| Total efficiency of removal from wastewater after onsite and offsite | 94,6 |
| (domestic treatment plant) RMMs (%) | |
| Maximum allowable site tonnage (MSafe) based on release following | 1,9E+06 |
| total wastewater treatment removal (kg/d) | |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| On the second se | 1 |

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 -Environment

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

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

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

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| Exposure Scenario - Worker | |
|----------------------------|---|
| 3000000701 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Metal working fluids / rolling oils- Professional |
| Use Descriptor | Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13, PROC 17 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.7c.v1 |
| Scope of process | Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/ reject articles, and disposal of waste oils. |

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

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

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

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| Organisational measures to prevent/limit release from site | | |
|--|------------|--|
| Do not apply industrial sludge to natural soils. | | |
| Sludge should be incinerated, contained or reclaimed. | | |
| Conditions and Measures related to municipal sewage treatment p | olant | |
| Estimated substance removal from wastewater via domestic sewage | 94,6 | |
| treatment (%) | | |
| Total efficiency of removal from wastewater after onsite and offsite | 94,6 | |
| (domestic treatment plant) RMMs (%) | | |
| Maximum allowable site tonnage (MSafe) based on release following | 3,4 | |
| total wastewater treatment removal (kg/d) | | |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 | |
| Conditions and Measures related to external treatment of waste for | r disposal | |

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

Conditions and measures related to external recovery of waste

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

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

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

| 200000007 | | |
|------------------|---|--|
| 3000000697 | | |
| SECTION 1 | EXPOSURE SCENARIO TITLE | |
| Title | Metal working fluids / rolling oils- Industrial | |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 17 Environmental Release Categories: ERC4, ESVOC SpERC 4.7a.v1 | |
| Scope of process | Covers the use in formulated MWFs/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils. | |

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

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

| 7 to surios a good basio stariat | <i>.</i> 100 | occupational riggiene is implemented. | |
|---|--------------|--|--|
| Contributing Scenarios | Ris | k Management Measures | |
| General exposures (closed systems)PROC1PROC2PRO | C3 | No other specific measures identified. | |
| General exposures (open sys tems)PROC4 | - | No other specific measures identified. | |
| Bulk transfersPROC8b | | No other specific measures identified. | |
| Filling/ preparation of equipme from drums or containers.PROC8b | ent | No other specific measures identified. | |
| Filling/ preparation of equipme from drums or containers.PROC5 | ent | No other specific measures identified. | |
| Filling/ preparation of equipme from drums or containers.PROC9 | ent | No other specific measures identified. | |

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| Process samplingPRO | C8b | | No other specific measures identif | ied. |
|---|----------------------------|--------------|---|---------------------------|
| Metal machining opera- | | | No other specific measures identif | ied |
| tionsPROC17 | | | The other specific measures identifi | iou. |
| Treatment by dipping a | nd pou | ır- | No other specific measures identif | ied. |
| ingPROC13 | | | • | |
| SprayingPROC7 | | | Minimise exposure by partial enclo | |
| | | | equipment and provide extract vei | ntilation at openings. |
| ManualRolling, Brush- | | | No other specific measures identif | ind |
| ingPROC10 | | | No other specific measures identifi | ieu. |
| Automated metal roll- | | | No other specific measures identif | ied. |
| ing/formingUse in conta | | | · | |
| systemsOperation is ca | | | | |
| at elevated temperature | | °C | | |
| above ambient tempera | ì- | | | |
| ture).PROC2 Semi-automated metal | roll | | Minimica exposure by partial and | acure of the energtion of |
| ing/formingOperation is | | ۱ ا | Minimise exposure by partial enclo equipment and provide extract ver | |
| out at elevated tempera | | | equipment and provide extract ver | illiation at openings. |
| 20°C above ambient te | | | | |
| ture).PROC17 | прога | | | |
| Equipment cleaning and | d | | No other specific measures identif | ied. |
| maintenancePROC8aP | | b | ' | |
| Storage.PROC1PROC2 | | | Store substance within a closed system. | |
| Section 2.2 | | Co | ntrol of Environmental Exposure | |
| Substance is complex l | JVCB. | - | | |
| Predominantly hydroph | | | | |
| Amounts Used | 0.0.0. | | | |
| Fraction of EU tonnage | used i | in re | gion: | 0,1 |
| Regional use tonnage (tonnes/year): | | | 1,0E+01 | |
| Fraction of Regional tor | | | | 1 |
| Annual site tonnage (to | nnes/y | ear) | : | 1,0E+01 |
| Maximum daily site ton | | | | 5,0E+02 |
| Frequency and Durati | on of | Use | | |
| Continuous release. | | | | |
| Emission Days (days/ye | | | | 20 |
| | | | enced by risk management | T |
| Local freshwater dilution factor: | | 10 | | |
| Local marine water dilu | | | | 100 |
| | | | ffecting Environmental Exposure | |
| Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to | | | | 2,0E-02 3,0E-05 |
| | | ,, ,,,, | m process (miliai reicase prior to | J,0L-03 |
| Release fraction to was | icwaic | | | |
| Release fraction to was RMM): | | roce | ess (initial release prior to RMM): | 0 |
| Release fraction to was RMM): Release fraction to soil | from p | | ess (initial release prior to RMM): ures at process level (source) to | |
| Release fraction to was RMM): Release fraction to soil Technical conditions | from p | eas | ess (initial release prior to RMM): ures at process level (source) to tes thus conservative process re- | |
| Release fraction to was RMM): Release fraction to soil Technical conditions Common practices vary lease estimates used. | from p and m / acros | eas s sit | ures at process level (source) to | prevent release |

sions and releases to soil

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| Risk from environmental exposure is driven by freshwater sediment. | |
|---|-----------------------|
| Prevent discharge of undissolved substance to or recover from onsite | |
| wastewater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 70 |
| Treat onsite wastewater (prior to receiving water discharge) to provide | 0 |
| the required removal efficiency of >= (%) | |
| If discharging to domestic sewage treatment plant, no secondary | 0 |
| wastewater treatment required. | |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| | |
| Conditions and Measures related to municipal sewage treatment p | |
| Estimated substance removal from wastewater via domestic sewage | 94,6 |
| treatment (%) | |
| Total efficiency of removal from wastewater after onsite and offsite | 94,6 |
| (domestic treatment plant) RMMs (%) | |
| Maximum allowable site tonnage (MSafe) based on release following | 2,0E+05 |
| total wastewater treatment removal (kg/d) | |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste for | - |
| External treatment and disposal of waste should comply with applicable | local and/or regional |
| regulations. | |
| | |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable | local and/or regional |
| regulations. | |
| | |

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

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

Section 3.2 - Environment

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

| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO | | |
|--|---|--|--|
| Section 4.1 - Health | | | |
| Measures/Operational Conditional Where other Risk Manageme | 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 occitatio Worke | - |
|--------------------------|---|
| 30000000694 | |
| | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Lubricants- ProfessionalHigh Environmental Release |
| Use Descriptor | Sector of Use: SU22 |
| · | Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13, PROC 17, PROC 18, PROC 20 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.6c.v1 |
| Scope of process | Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil. |

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

| Contributing Scenarios | Risk | Management Measures | |
|---|------|---|--|
| General exposures (closed sy tems)PROC1PROC2PROC3 | /S- | No other specific measures identified. | |
| Operation of equipment conta engine oils and similar.PROC | | No other specific measures identified. | |
| General exposures (open sys tems)PROC4 | - | No other specific measures identified. | |
| Bulk transfersPROC8b | | No other specific measures identified. | |
| Filling/ preparation of equipme from drums or containers.Dedicated facilityPROC8b | | No other specific measures identified. | |
| Filling/ preparation of equipme from drums or containers.Non dedicated facilityPROC8a | | No other specific measures identified. | |
| Operation and lubrication of henergy open equipmentIndoorPROC17PROC18 | igh | Restrict area of openings to equipment. | |

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

| Section 2.2 | Control of Environmental Exposure | |
|-------------------------------------|---|---------|
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used | in region: | 0,1 |
| Regional use tonnage (tonne | s/year): | 2,0 |
| Fraction of Regional tonnage | used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/ | year): | 1,0E-03 |
| Maximum daily site tonnage (| kg/day): | 2,7E-03 |
| Frequency and Duration of | Use | |
| Continuous release. | | |
| Emission Days (days/year): | | 365 |
| Environmental factors not i | nfluenced by risk management | |
| Local freshwater dilution factor | or: | 10 |
| Local marine water dilution fa | 100 | |
| Other Operational Condition | ns affecting Environmental Exposure | |
| Release fraction to air from p | rocess (initial release prior to RMM): | 0,15 |
| Release fraction to wastewate RMM): | er from process (initial release prior to | 5,0E-02 |
| Release fraction to soil from p | process (initial release prior to RMM): | 5,0E-02 |

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| Technical conditions and measures at process level (source) to pr | - everit 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, no secondary wastewater treatment required. | 0 |
| Organisational measures to prevent/limit release from site | 1 |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 94,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 94,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 1,4 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste fo | r disposal |
| External treatment and disposal of waste should comply with applicable regulations. | |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable regulations. | local and/or regional |

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

Section 3.2 -Environment

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

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

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Section 4.2 - Environment

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

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

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

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| 30000000692 | | | |
|------------------|---|--|--|
| 300000000092 | | | |
| | | | |
| SECTION 1 | EXPOSURE SCENARIO TITLE | | |
| Title | Lubricants- ProfessionalLow Environmental Release | | |
| Use Descriptor | Sector of Use: SU22 | | |
| | Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13, PROC 17, PROC 18, PROC 20 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.6b.v1 | | |
| Scope of process | Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil. | | |

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

| Contributing Scenarios | Risk | Management Measures | |
|---|------|---|--|
| General exposures (closed sy tems)PROC1PROC2PROC3 | 'S- | No other specific measures identified. | |
| Operation of equipment conta engine oils and similar.PROC | _ | No other specific measures identified. | |
| General exposures (open systems)PROC4 | - | No other specific measures identified. | |
| Bulk transfersPROC8b | | No other specific measures identified. | |
| Filling/ preparation of equipme from drums or containers.Dedicated facilityPROC8b | | No other specific measures identified. | |
| Filling/ preparation of equipme from drums or containers.Non dedicated facilityPROC8a | | No other specific measures identified. | |
| Operation and lubrication of h energy open equipmentIn- doorPROC17PROC18 | igh | Restrict area of openings to equipment. | |

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

| Section 2.2 | Control of Environmental Exposure | | | |
|---|--|---------|--|--|
| Substance is complex UVCB. | | | | |
| Predominantly hydrophobic. | | | | |
| Amounts Used | Amounts Used | | | |
| Fraction of EU tonnage used | in region: | 0,1 | | |
| Regional use tonnage (tonnes/year): | | 2,0E+00 | | |
| Fraction of Regional tonnage used locally: | | 5,0E-04 | | |
| Annual site tonnage (tonnes/year): | | 1,0E-03 | | |
| Maximum daily site tonnage (| 2,7E-03 | | | |
| Frequency and Duration of Use | | | | |
| Continuous release. | | | | |
| Emission Days (days/year): | | 365 | | |
| Environmental factors not influenced by risk management | | | | |
| Local freshwater dilution factor | or: | 10 | | |
| Local marine water dilution fa | 100 | | | |
| Other Operational Conditions affecting Environmental Exposure | | | | |
| Release fraction to air from p | 1,0E-02 | | | |
| Release fraction to wastewate RMM): | 1,0E-02 | | | |
| Release fraction to soil from process (initial release prior to RMM): | | 1,0E-02 | | |

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| 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 | 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 the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 94,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 94,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 1,4 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste for | r disposal |
| External treatment and disposal of waste should comply with applicable local and/or regional regulations. | |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable local and/or regional regulations. | |

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

Section 3.2 - Environment

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

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

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Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

| Exposure Scenario - Worker | | |
|----------------------------|--|--|
| 30000000691 | 000000691 | |
| | | |
| SECTION 1 | EXPOSURE SCENARIO TITLE | |
| Title | Lubricants- Industrial | |
| Use Descriptor | Sector of Use: SU3 | |
| | Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 17, PROC 18 Environmental Release Categories: ERC4, ERC7, ESVOC SpERC 4.6a.v1 | |
| Scope of process | Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes. | |

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

| 0 () () () | D: 1 M |
|---------------------------------|---|
| Contributing Scenarios | Risk Management Measures |
| General exposures (closed | No other specific measures identified. |
| systems)PROC1PROC2PROC | 23 |
| General exposures (open sys- | No other specific measures identified. |
| tems)PROC4 | |
| Bulk transfersPROC8b | No other specific measures identified. |
| | · · |
| Filling/ preparation of equipme | nt No other specific measures identified. |
| from drums or containers.Non- | |
| dedicated facilityPROC8a | |
| Filling/ preparation of equipme | nt No other specific measures identified. |
| from drums or contain- | ' |
| ers.Dedicated facilityPROC8b | |
| Initial factory fill of equip- | No other specific measures identified. |
| mentPROC9 | · |
| Operation and lubrication of | No other specific measures identified. |
| high energy open equip- | · |
| mentPROC17PROC18 | |

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| ManualRolling, Brush- | No other specific measures identified | d |
|--|---|-------------------------------------|
| ingPROC10 | No other specific measures identified | u. |
| Treatment by dipping and pouringPROC13 | No other specific measures identified | d. |
| SprayingPROC7 | Minimise exposure by partial enclose equipment and provide extract ventile | |
| Maintenance (of larger plant items) and machine set up-PROC8b | No other specific measures identified | d. |
| Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC8b | | |
| Maintenance of small itemsPROC8a | No other specific measures identified | |
| Remanufacture of reject articlesPROC9 | No other specific measures identified | d. |
| Storage.PROC1PROC2 | Store substance within a closed syst | tem. |
| Section 2.2 C | ontrol of Environmental Exposure | |
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in r | region: | 0,1 |
| Regional use tonnage (tonnes/ye | | 5,6E+01 |
| Fraction of Regional tonnage use | | 1 |
| Annual site tonnage (tonnes/yea | • | 5,6E+01 |
| Maximum daily site tonnage (kg/ | | 2,8E+03 |
| Frequency and Duration of Us | | 2,02100 |
| Continuous release. | <u> </u> | |
| Emission Days (days/year): | | 20 |
| Environmental factors not influ | uenced by risk management | 20 |
| Local freshwater dilution factor: | deneed by fisk management | 10 |
| Local marine water dilution factor | r· | 100 |
| | | 100 |
| Chiner Cheramonal Conditions | attecting Environmental Expositie | |
| | affecting Environmental Exposure | 5.0F-03 |
| Release fraction to air from proc Release fraction to wastewater f | ess (initial release prior to RMM): rom process (initial release prior to | 5,0E-03 3,0E-05 |
| Release fraction to air from proc Release fraction to wastewater f RMM): | ess (initial release prior to RMM): rom process (initial release prior to | 3,0E-05 |
| Release fraction to air from proc Release fraction to wastewater f RMM): Release fraction to soil from proc | ess (initial release prior to RMM): rom process (initial release prior to cess (initial release prior to RMM): | 3,0E-05 1,0E-03 |
| Release fraction to air from proc Release fraction to wastewater f RMM): Release fraction to soil from proc Technical conditions and mea | ess (initial release prior to RMM): rom process (initial release prior to cess (initial release prior to RMM): sures at process level (source) to pr | 3,0E-05 1,0E-03 |
| Release fraction to air from proc Release fraction to wastewater f RMM): Release fraction to soil from proc Technical conditions and mea | ess (initial release prior to RMM): rom process (initial release prior to cess (initial release prior to RMM): | 3,0E-05 1,0E-03 |
| Release fraction to air from proc Release fraction to wastewater f RMM): Release fraction to soil from proc Technical conditions and mea Common practices vary across s lease estimates used. | ess (initial release prior to RMM): rom process (initial release prior to cess (initial release prior to RMM): sures at process level (source) to pr | 3,0E-05 1,0E-03 event release |
| Release fraction to air from proc Release fraction to wastewater f RMM): Release fraction to soil from proc Technical conditions and mea Common practices vary across s lease estimates used. | ess (initial release prior to RMM): rom process (initial release prior to cess (initial release prior to RMM): sures at process level (source) to presites thus conservative process re- | 3,0E-05 1,0E-03 event release |
| Release fraction to air from proceure Release fraction to wastewater fraction to soil from proceure RMM): Release fraction to soil from proceure Release fraction proceure Release fraction proceure Release fraction to wastewater fraction proceure fraction to wastewater fraction to wastewater fraction proceure fraction to wastewater fraction to wastewater fraction to wastewater fraction proceure fraction to soil from proceure fraction proceure fraction to soil from proceure fraction fractions and mean fraction proceure fraction fraction fractions and mean fraction fractio | ess (initial release prior to RMM): rom process (initial release prior to cess (initial release prior to RMM): sures at process level (source) to presites thus conservative process re- | 3,0E-05 1,0E-03 event release |
| Release fraction to air from proceur Release fraction to wastewater fraction to soil from proceur RMM): Release fraction to soil from proceur Release fraction to wastewater fraction from proceur Release fraction to soil from proceur Release fraction from proceur Release fraction from proceur Release fraction fractions and mean fraction frac | ess (initial release prior to RMM): rom process (initial release prior to cess (initial release prior to RMM): sures at process level (source) to presites thus conservative process re- and measures to reduce or limit disch | 3,0E-05 1,0E-03 event release |
| Release fraction to air from proceur Release fraction to wastewater fraction to soil from proceur Release fraction to wastewater fraction from proceur Release fraction to soil from proceur Release fraction fractions and measure fraction fractions and release fraction fractions and release fraction fr | ess (initial release prior to RMM): rom process (initial release prior to cess (initial release prior to RMM): sures at process level (source) to presites thus conservative process re- and measures to reduce or limit dischere is driven by freshwater sediment. d substance to or recover from onsite | 3,0E-05 1,0E-03 event release |

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| Treat onsite wastewater (prior to receiving water discharge) to provide | 0 | |
|--|---------------|--|
| the required removal efficiency of >= (%) | | |
| If discharging to domestic sewage treatment plant, no secondary | 0 | |
| wastewater treatment required. | | |
| Organisational measures to prevent/limit release from site | | |
| Do not apply industrial sludge to natural soils. | | |
| Sludge should be incinerated, contained or reclaimed. | | |
| | | |
| Conditions and Measures related to municipal sewage treatment p | lant | |
| Estimated substance removal from wastewater via domestic sewage | 94,6 | |
| treatment (%) | | |
| Total efficiency of removal from wastewater after onsite and offsite | 94,6 | |
| (domestic treatment plant) RMMs (%) | | |
| Maximum allowable site tonnage (MSafe) based on release following | 8,9E+05 | |
| total wastewater treatment removal (kg/d) | | |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 | |
| Conditions and Measures related to external treatment of waste for | r disposal | |
| External treatment and disposal of waste should comply with applicable local and/or regional | | |
| regulations. | · · | |
| | | |
| Conditions and measures related to external recovery of waste | | |
| External recovery and recycling of waste should comply with applicable local and/or regional | | |
| regulations. | 9 * ** | |
| | | |

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

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

Section 3.2 - Environment

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

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

Section 4.2 - Environment

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

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

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

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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

| 30000000690 | |
|------------------|---|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use in Oil and Gas field drilling and production operations- Industrial |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b Environmental Release Categories: ERC4, ESVOC SpERC 4.5a.v1 |
| Scope of process | Oil field well drilling and production operations (including drilling muds and well cleaning) including material transfers, onsite formulation, well head operations, shaker room activities and related maintenance. |

| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT |
|-------------------------------|--|
| SECTION 2 | MEASURES |
| Section 2.1 | Control of Worker Exposure |
| Product Characteristics | • |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Sub- | Covers use of substance/product up to 100% (unless stated |
| stance in Mixture/Article | differently)., |
| Frequency and Duration of | Use |
| | 8 hours (unless stated differently). |
| Other Operational Conditio | ns affecting Exposure |
| Assumes use at not more that | in 20°C above ambient temperature (unless stated differently). |
| | ard of occupational hygiene is implemented. |
| Contributing Scenarios | Risk Management Measures |
| Bulk transfersDedicated | No other specific measures identified. |
| facilityPROC8b | |
| Filling/ preparation of | No other specific measures identified. |
| equipment from drums or | |
| containers.Dedicated facili- | |
| tyPROC8b | |
| Drilling mud (re- | No other specific measures identified. |
|)formulationPROC3 | |
| Drill floor operationsPROC4 | No other specific measures identified. |
| Operation of solids filtering | No other specific measures identified. |
| equipment - vapour expo- | |
| suresPROC4 | |
| Cleaning of solids filtering | No other specific measures identified. |
| equipmentPROC8a | · |
| Treatment and disposal of | No other specific measures identified. |
| filtered solidsPROC3 | |

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

| SECTION 3 | EXPOSURE ESTIMATION |
|----------------------|---------------------|
| Section 3.1 - Health | |

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

Section 3.2 - Environment

Qualitative approach used to conclude safe use.

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

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

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

Section 4.2 - Environment

No exposure assessment presented for the environment.

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Exposure Scenario - Worker

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

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

| Contributing Scenarios | Risk Management Measures |
|---|---|
| Filling/ preparation of equipme from drums or contain- | nt No other specific measures identified. |
| ers.Dedicated facilityPROC8b | |
| Filling/ preparation of equipme from drums or containers.Non-dedicated facilityPROC8a | |
| Automated process with (semi closed systems.Use in contain systemsPROC2 | , I |
| Automated process with (semi closed systems.Drum/batch trafersUse in contained systemsPROC3 | , I |
| Semi Automated process. (e.g Semi automatic application of care and maintenance prod- ucts)PROC4 | |

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| Filling/ preparation of equipment from drums or containers.PROC8a | No other specific measures identified. |
|--|---|
| ManualSurfacesCleaningDipping, immersion and pouringPROC13 | No other specific measures identified. |
| Cleaning with low-pressure washersRolling, Brushingno sprayingPROC10 | No other specific measures identified. |
| Cleaning with high pressure washersSprayingIndoorPROC11 | Provide enhanced general ventilation by mechanical means. Limit the substance content in the product to 25 %. |
| Cleaning with high pressure washersSprayingOutdoorPROC11 | Ensure operation is undertaken outdoors. Limit the substance content in the product to 5 %. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| ManualSurfacesCleaningPROC10 | No other specific measures identified. |
| Ad hoc manual application via trigger sprays, dipping, etc.Rolling, BrushingPROC10 | No other specific measures identified. |
| Cleaning of medical devic- esPROC4 | No other specific measures identified. |
| Storage.PROC1 | Store substance within a closed system. |

| Section 2.2 Control of Environmental Exposure | | |
|---|--|-------------------|
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used | in region: | 0,1 |
| Regional use tonnage (tonnes | s/year): | 6,0E-01 |
| Fraction of Regional tonnage | used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/ | /ear): | 3,0E-04 |
| Maximum daily site tonnage (| kg/day): | 8,2E-04 |
| Frequency and Duration of Use | | |
| Continuous release. | | |
| Emission Days (days/year): | | 365 |
| Environmental factors not i | | |
| Local freshwater dilution factor | or: | 10 |
| Local marine water dilution factor: | | 100 |
| Other Operational Conditions affecting Environmental Exposure | | |
| Release fraction to air from p | ocess (initial release prior to RMM): | 2,0E-02 |
| Release fraction to wastewater from process (initial release prior to RMM): | | 1,0E-06 |
| Release fraction to soil from process (initial release prior to RMM): | | 0 |
| Technical conditions and measures at process level (source) to pre | | 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- | | harges, air emis- |

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| sions and releases to soil | |
|---|------------|
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 94,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 94,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 4,1E-01 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste fo | r disposal |
| External treatment and disposal of waste should comply with applicable local and/or regional regulations. | |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable local and/or regional regulations. | |

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

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

Section 3.2 - Environment

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

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

Section 4.2 - Environment

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

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

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

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

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Exposure Scenario - Worker

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

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

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios Risk Management Measures Bulk transfersPROC8a No other specific measures identified. Automated process with (semi) No other specific measures identified. closed systems. Use in contained systemsPROC2 Automated process with (semi) No other specific measures identified. closed systems. Drum/batch transfersPROC3 Application of cleaning products in No other specific measures identified. closed systemsPROC2 Filling/ preparation of equipment No other specific measures identified. from drums or containers.PROC8b Use in contained batch process-No other specific measures identified. esPROC4 Degreasing small objects in No other specific measures identified.

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| cleaning stationPROC13 | | |
|--|--|---------------------------|
| Cleaning with low-pressure washersPROC10 | No other specific measures identifi | ed. |
| Cleaning with high pressure | Limit the substance content in the | |
| washersPROC7 | Avoid carrying out operation for mo | ore than 1 hour. |
| | , or: | |
| | Wear a respirator conforming to El better. | N140 with Type A filter o |
| ManualSurfacesCleaningPROC10 | No other specific measures identifi | ed |
| | · | |
| Storage.PROC1 | Store substance within a closed sy | rstem. |
| Section 2.2 Cont | trol of Environmental Exposure | |
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in regi | ion: | 0,1 |
| Regional use tonnage (tonnes/year | | 1,7E+02 |
| Fraction of Regional tonnage used | | 5,9E-01 |
| Annual site tonnage (tonnes/year): | • | 100 |
| Maximum daily site tonnage (kg/day | y): | 5,0E+03 |
| Frequency and Duration of Use | | · |
| Continuous release. | | |
| Emission Days (days/year): | | 20 |
| Environmental factors not influer | nced by risk management | |
| Local freshwater dilution factor: | | 10 |
| Local marine water dilution factor: | | 100 |
| Other Operational Conditions afford | ecting Environmental Exposure | |
| Release fraction to air from process | (initial release prior to RMM): | 1,0 |
| Release fraction to wastewater from | n process (initial release prior to | 3,0E-06 |
| RMM): | | |
| Release fraction to soil from proces | | 0 |
| | res at process level (source) to pr | event release |
| Common practices vary across site | s thus conservative process re- | |
| lease estimates used. | | |
| Technical onsite conditions and sions and releases to soil | measures to reduce or limit disch | arges, air emis- |
| | e driven by freshwater | |
| Risk from environmental exposure in Prevent discharge of undissolved so | | |
| wastewater. | ubstance to or recover from onsite | |
| No wastewater treatment required. | | |
| Treat air emission to provide a typic | cal removal efficiency of (%) | 70 |
| Treat onsite wastewater (prior to re- | | 0 |
| the required removal efficiency of > | 3 , , | |
| If discharging to domestic sewage t | | 0 |
| wastewater treatment required. | | |
| Organisational measures to prev | | |
| Do not apply industrial sludge to na | | |
| Sludge should be incinerated, conta | ained or reclaimed. | |
| | | |

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| Conditions and Measures related to municipal sewage treatment plant | | |
|--|---------|--|
| Estimated substance removal from wastewater via domestic sewage | 94,6 | |
| treatment (%) | | |
| Total efficiency of removal from wastewater after onsite and offsite | 94,6 | |
| (domestic treatment plant) RMMs (%) | | |
| Maximum allowable site tonnage (MSafe) based on release following | 2,0E+06 | |
| total wastewater treatment removal (kg/d) | | |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 | |

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

indicated.

Section 3.2 - Environment

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

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

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

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

| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES | |
|---|--|--|
| Section 2.1 | Control of Worker Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP | |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., | |
| Frequency and Duration of | Use | |
| Covers daily exposures up to | 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | | |
| A | 0000 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: 1: | |

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)PROC1 | |
| Filling/ preparation of equipmer from drums or containers.Use contained systemsPROC2 | |
| General exposures (closed systems)Use in contained systemsPROC2 | No other specific measures identified. |
| Preparation of material for app cationUse in contained batch processesPROC3 | li- No other specific measures identified. |
| Film formation - air dryingPRO | C4 No other specific measures identified. |
| Preparation of material for app cationPROC5 | li- No other specific measures identified. |

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| Material transfersDrum/batch | No other specific measures identified. | |
|---|--|--|
| transfersNon-dedicated facili- tyPROC8aPROC8b | No other specific measures identified. | |
| Roller, spreader, flow applicationPROC10 | No other specific measures identified. | |
| ManualSprayingIndoorPROC11 | Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Limit the substance content in the mixture to 50 %. , or: Wear a respirator conforming to EN140 with Type A filter or better. | |
| ManualSprayingOutdoorPROC11 | Ensure operation is undertaken outdoors. Limit the substance content in the mixture to 50 %. Avoid carrying out operation for more than 4 hours. , or: Limit the substance content in the product to 5 %. | |
| | , or: Wear a respirator conforming to EN140 with Type A filter or better. | |
| Dipping, immersion and pouringPROC13 | No other specific measures identified. | |
| Laboratory activitiesPROC15 | No other specific measures identified. | |
| Hand application - fingerpaints, pastels, adhesivesIn-doorPROC19 | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). | |
| Hand application - fingerpaints, pastels, adhesivesOut-doorPROC19 | Ensure operation is undertaken outdoors. | |
| Storage.PROC1 | Store substance within a closed system. | |
| Section 2.2 Con | trol of Environmental Exposure | |
| Substance is complex UVCB. | | |

| 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): | 2,2E+02 |
| Fraction of Regional tonnage | used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | | 1,1E-01 |
| Maximum daily site tonnage (kg/day): | | 3,0E-01 |
| Frequency and Duration of Use | | |
| Continuous release. | | |
| Emission Days (days/year): | | 365 |
| Environmental factors not influenced by risk management | | |
| Local freshwater dilution factor | or: | 10 |
| Local marine water dilution factor: | | 100 |
| Other Operational Conditions affecting Environmental Exposure | | |
| Release fraction to air from p | rocess (initial release prior to RMM): | 0,98 |

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| Release fraction to wastewater from process (initial release prior to RMM): | 1,0E-02 |
|---|-----------------------|
| Release fraction to soil from process (initial release prior to RMM): | 1,0E-02 |
| Technical conditions and measures at process level (source) to pr | |
| Common practices vary across sites thus conservative process re- | |
| lease estimates used. | |
| Technical onsite conditions and measures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | _ |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide | 0 |
| the required removal efficiency of >= (%) | |
| If discharging to domestic sewage treatment plant, no secondary | 0 |
| wastewater treatment required. | |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 94,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 94,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 1,4E+02 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste fo | r disposal |
| External treatment and disposal of waste should comply with applicable | - |
| regulations. | J |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable regulations. | local and/or regional |

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

Section 3.2 - Environment

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

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

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Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

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

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

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| Film formation - air dry- | No other specific measures identified. | |
|--|--|-----------------------|
| ingPROC4 | 110 Salor opcome measures lacitudea. | |
| Preparation of material for | No other specific measures identified. | |
| applicationMixing opera- | The earth opening measures lashanear | |
| tions (open sys- | | |
| tems)PROC5 | | |
| Spraying (automat-ic/robotic)PROC7 | Carry out in a vented booth provided with laminar airflow. | |
| ManualSprayingPROC7 | Carry out in a vented booth provided with | laminar airflow. |
| | , or: Wear a respirator conforming to EN140 w better. | vith Type A filter or |
| Material transfersNon- dedicated facilityPROC8a | No other specific measures identified. | |
| Material transfersDedicated facilityPROC8b | No other specific measures identified. | |
| Roller, spreader, flow applicationPROC10 | No other specific measures identified. | |
| Dipping, immersion and pouringPROC13 | No other specific measures identified. | |
| Laboratory activi- tiesPROC15 | No other specific measures identified. | |
| Material trans- | No other specific measures identified. | |
| fersDrum/batch transfer- | | |
| sTransfer from/pouring from | | |
| containersPROC9 | | |
| Production or preparation | No other specific measures identified. | |
| or articles by tabletting, | | |
| compression, extrusion or pelletisationPROC14 | | |
| Equipment cleaning and | No other specific measures identified. | |
| maintenancePROC8a | 140 other specific measures identified. | |
| Storage.PROC1 | Store substance within a closed system. | |
| Section 2.2 | Control of Environmental Exposure | |
| Substance is complex UVCB | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used | in region: | 0,1 |
| Regional use tonnage (tonne | s/year): | 1,7E+03 |
| Fraction of Regional tonnage used locally: | | 1 |
| Annual site tonnage (tonnes/ | | 1,7E+03 |
| | Maximum daily site tonnage (kg/day): 1,7E+04 | |
| Frequency and Duration of | | |
| Continuous release. | | |
| Emission Days (days/year): | | 100 |
| | nfluenced by risk management | |
| Local freshwater dilution factor | | 10 |
| 1 1 | | |
| Local marine water dilution fa | | 100 |

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| Release fraction to air from process (initial release prior to RMM): | 9,8E-01 |
|---|-----------------------|
| Release fraction to wastewater from process (initial release prior to | 7,0E-04 |
| RMM): | |
| Release fraction to soil from process (initial release prior to RMM): | 0 |
| Technical conditions and measures at process level (source) to pro | event release |
| Common practices vary across sites thus conservative process re- | |
| lease estimates used. | |
| Technical onsite conditions and measures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | |
| Risk from environmental exposure is driven by freshwater sediment. | |
| Prevent discharge of undissolved substance to or recover from onsite | |
| wastewater. | |
| If discharging to domestic sewage treatment plant, no secondary | |
| wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 90 |
| Treat onsite wastewater (prior to receiving water discharge) to provide | 87,8 |
| the required removal efficiency of >= (%) | |
| If discharging to domestic sewage treatment plant, no secondary | 0 |
| wastewater treatment required. | |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| | |
| Conditions and Measures related to municipal sewage treatment p | |
| Estimated substance removal from wastewater via domestic sewage | 94,6 |
| treatment (%) | |
| Total efficiency of removal from wastewater after onsite and offsite | 94,6 |
| (domestic treatment plant) RMMs (%) | |
| Maximum allowable site tonnage (MSafe) based on release following | 3,8E+04 |
| total wastewater treatment removal (kg/d) | |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste for | |
| External treatment and disposal of waste should comply with applicable | local and/or regional |
| regulations. | |
| | |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable | local and/or regional |
| regulations. | |
| | |

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

Section 3.2 - Environment

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

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| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE |
|-----------|--|
| | EXPOSURE SCENARIO |

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

| 30000000681 | |
|------------------|--|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Formulation & (re)packing of substances and mixtures- Industrial |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 14, PROC 15 Environmental Release Categories: ERC2, ESVOC SpERC 2.2.v1 |
| Scope of process | Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities. |

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

Assumes a good basic standard of occupational hygiene is implemented.

| Contributing Scenarios | Risk Management Measures |
|---|--|
| General exposures (closed systems)PROC1PROC2PROC | No other specific measures identified. |
| General exposures (open systems)PROC4 | No other specific measures identified. |
| Batch processes at elevated temperaturesOperation is carried out at elevated temperatu (> 20°C above ambient tempe ature).PROC3 | |
| Process samplingPROC3 | No other specific measures identified. |
| Laboratory activitiesPROC15 | No other specific measures identified. |
| Bulk transfersPROC8b | No other specific measures identified. |
| Mixing operations (open sys- | No other specific measures identified. |

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tems)PROC5

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| tomaji 1000 | | |
|--|--|------------------|
| ManualTransfer from/pouring from containersNon-dedicated | No other specific measures identified | d. |
| facilityPROC8a | | |
| Drum/batch transfersDedicated | No other specific measures identified | 1 |
| facilityPROC8b | The enter openine measures rashanes | •• |
| Production or preparation or | No other specific measures identified | <u> </u> |
| articles by tabletting, compres- | | •• |
| sion, extrusion or pelletisa- | | |
| tionPROC14 | | |
| Drum and small package fill- | No other specific measures identified | d. |
| ingPROC9 | | |
| Equipment cleaning and | No other specific measures identified | d. |
| maintenancePROC8a | • | |
| Storage.PROC1PROC2 | Store substance within a closed syst | em. |
| | _ | |
| • | ontrol of Environmental Exposure | |
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in re | | 0,1 |
| Regional use tonnage (tonnes/ye | ar): | 5,1E+02 |
| Fraction of Regional tonnage use | d locally: | 1 |
| Annual site tonnage (tonnes/year |): | 5,1E+02 |
| Maximum daily site tonnage (kg/d | day): | 5,1E+03 |
| Frequency and Duration of Use | • | |
| Continuous release. | | |
| Emission Days (days/year): | | 100 |
| Environmental factors not influ | enced by risk management | |
| Local freshwater dilution factor: | | 10 |
| Local marine water dilution factor: | | 100 |
| Other Operational Conditions a | Iffecting Environmental Exposure | |
| Release fraction to air from proce | ess (initial release prior to RMM): | 1,0E-02 |
| Release fraction to wastewater fr | om process (initial release prior to | 2,0E-04 |
| RMM): | | |
| | ess (initial release prior to RMM): | 1,0E-04 |
| | sures at process level (source) to pro | event release |
| Common practices vary across si | tes thus conservative process re- | |
| lease estimates used. | | |
| | d measures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | | |
| | e is driven by freshwater sediment. | |
| Prevent discharge of undissolved substance to or recover from onsite | | |
| wastewater. | | |
| No wastewater treatment required | d. | |
| Treat air emission to provide a ty | | 0 |
| | receiving water discharge) to provide | 0 |
| the required removal efficiency of >= (%) | | |
| If discharging to domestic sewage treatment plant, no secondary | | 0 |
| wastewater treatment required. | | |
| Organisational measures to pro | event/limit release from site | |
| | | |

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Do not apply industrial sludge to natural soils.

Sludge should be incinerated, contained or reclaimed.

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

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

Section 3.1 - Health

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

Section 3.2 -Environment

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

| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE |
|-----------|---------------------------------------|
| | EXPOSIBE 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

| 30000000678 | | | |
|------------------|--|--|--|
| SECTION 1 | EXPOSURE SCENARIO TITLE | | |
| Title | Distribution of substance- Industrial | | |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 9, PROC 15 Environmental Release Categories: ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC 6C,, ERC7, ESVOC SpERC 1.1b.v1 | | |
| Scope of process | Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities. | | |

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

General exposures (closed No other specific measures identified.

| systems)PROC1PROC2PROC3 | 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 |
| | | 0,1 |
| Regional use tonnage (tonnes/year): Fraction of Regional tonnage used locally: | | 2E-03 |
| | | |
| Annual site tonnage (tonnes | | 2,0E-03 |
| Maximum daily site tonnage | | 150 |
| Frequency and Duration of | USE | 1 |
| Continuous release. | | 00 |
| Emission Days (days/year): | Cofficer of the Salara and the salara | 20 |
| | influenced by risk management | T 40 |
| Local freshwater dilution fact | | 10 |
| Local marine water dilution f | | 100 |
| • | ons affecting Environmental Exposure | T |
| | process (initial release prior to RMM): | 1,0E-03 |
| | ter from process (initial release prior to | 1,0E-05 |
| RMM): | | |
| | process (initial release prior to RMM): | 1,0E-05 |
| | neasures at process level (source) to pr | event release |
| | ess sites thus conservative process re- | |
| lease estimates used. | | |
| | s and measures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | | 1 |
| | osure is driven by freshwater. | |
| 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, no secondary | 0 |
| wastewater treatment require | | |
| Organisational measures t | o prevent/limit release from site | |
| Do not apply industrial sludg | | |
| Sludge should be incinerated | d, contained or reclaimed. | |
| | | |
| | related to municipal sewage treatment p | lant |
| | al from wastewater via domestic sewage | 94,6 |
| treatment (%) | | |
| • | om wastewater after onsite and offsite | 94,6 |
| (domestic treatment plant) R | | |
| | nage (MSafe) based on release following | 5,0E+01 |
| total wastewater treatment re | | |
| Assumed domestic sewage | | 2,0E+03 |
| | related to external treatment of waste fo | |
| External treatment and dispo | sal of waste should comply with applicable | local and/or regiona |
| regulations. | | - |
| | | |
| | related to external recovery of waste | |
| External recovery and recycl | ing of waste should comply with applicable | local and/or regiona |

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regulations.

| SECTION 3 | EXPOSURE ESTIMATION |
|-----------|----------------------------|
| SECTION 3 | EXPOSURE ESTIMATION |

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

| Exposure coeriano Worke | • | | |
|-------------------------|---|--|--|
| 30000000677 | | | |
| SECTION 1 | EXPOSURE SCENARIO TITLE | | |
| Title | Manufacture of substance- Industrial | | |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 15 Environmental Release Categories: ERC1, ERC4, ESVOC SpERC 1.1.v1 | | |
| Scope of process | Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities. | | |

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

Contributing Scenarios Risk Management Measures General exposures (closed No other specific measures identified. systems)PROC1PROC2PROC3 General exposures (open sys-No other specific measures identified. tems)PROC4 Process samplingPROC8b No other specific measures identified. Laboratory activitiesPROC15 No other specific measures identified. No other specific measures identified. Bulk transfers(open systems)PROC8b Bulk transfers(closed sys-No other specific measures identified. tems)PROC8b Equipment cleaning and No other specific measures identified. maintenancePROC8a Storage.PROC1PROC2 Store substance within a closed system. Section 2.2 **Control of Environmental Exposure**

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| Substance is compley LIV/CR | |
|---|------------------|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Amounts Used | 0.4 |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 6,0E+03 |
| Fraction of Regional tonnage used locally: | 1 |
| Annual site tonnage (tonnes/year): | 6,0E+03 |
| Maximum daily site tonnage (kg/day): | 6,0E+04 |
| Frequency and Duration of Use | |
| Continuous release. | |
| Emission Days (days/year): | 100 |
| Environmental factors not influenced by risk management | T |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| Other Operational Conditions affecting Environmental Exposure | |
| Release fraction to air from process (initial release prior to RMM): | 1,0E-02 |
| Release fraction to wastewater from process (initial release prior to RMM): | 3,0E-04 |
| Release fraction to soil from process (initial release prior to RMM): | 1,0E-04 |
| Technical conditions and measures at process level (source) to pro | event release |
| Common practices vary across sites thus conservative process re- | |
| lease estimates used. | |
| Technical onsite conditions and measures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | |
| Risk from environmental exposure is driven by freshwater sediment. | |
| Prevent discharge of undissolved substance to or recover from onsite | |
| wastewater. | |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 90 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 60,0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. | |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 94,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 94,6 |
| Maximum allowable site tonnage (MSafe) based on release following | 4,4E+05 |
| total wastewater treatment removal (kg/d) | <u> </u> |
| Assumed domestic sewage treatment plant flow (m3/d) | 1,0E+04 |
| Conditions and Measures related to external treatment of waste for | r disposal |
| During manufacturing no waste of the substance is generated. | |
| Conditions and measures related to external recovery of waste | |
| During manufacturing no waste of the substance is generated. | |
| | |

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SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Consumer

| 30000001100 | | |
|------------------|---|--|
| | | |
| SECTION 1 | EXPOSURE SCENARIO TITLE | |
| Title | Uses in Coatings - Consumer | |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC1, PC4, PC8 (excipient only), PC9a, PC9b, PC9c, PC15, PC18, PC23, PC24, PC31, PC34 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.3c.v1 | |
| Scope of process | Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning. | |

| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES | |
|---|---|--------|
| Section 2.1 | Control of Consumer Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure > 10 kPa at STP | |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. | |
| | Covers concentration up to (%): 100 % | |
| Amounts Used | | |
| Unless stated otherwise. | | |
| for each use event, covers amount up to (g): 13.800 | | 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 | | 6 |
| Other Operational Condition | ns affecting Exposure | |
| Unless stated otherwise. | | |
| 0 | 1 | |

Covers use at ambient temperatures.

Covers use in room size of 20m3

Covers use under typical household ventilation.

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

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

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| Anti-Freeze and de-icing products Lock de-icer. | Covers exposure up to 0,17 hours/event 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 |
|---|--|
| • | 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 |
| products Edek de leer. | Covers use up to 1 times/day of use covers skin contact area up to (cm2): 214,40 cm2 |
| | Covers use up to 1 times/day of use covers skin contact area up to (cm2): 214,40 cm2 |
| | covers skin contact area up to (cm2): 214,40 cm2 |
| | |
| | Lear anch lice avant covere amount up to 1 a |
| | For each use event, covers amount up to 4 g Covers use in a one car garage (34 m3) under typical ventila- |
| | tion. |
| | Covers use in room size of 34 m3 |
| | Covers exposure up to 0,25 hours/event |
| Riccidal products (o.g. Dis | Covers concentrations up to 5 % |
| Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Laundry and dish washing products. | Covers concentrations up to 3 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 15 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,50 hours/event |
| Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, liquids (all purpose clean- ers, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners). | Covers concentrations up to 5 % |
| | covers use up to 128 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 27 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,33 hours/event |
| Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, trigger sprays (all purpose cleaners,sanitary products, glass cleaners). | Covers concentrations up to 15 % |
| | covers use up to 128 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,00 cm2 |
| | For each use event, covers amount up to 35 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,17 hours/event |
| Coatings and paints, thin- | Covers concentrations up to 1,5 % |

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

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| floor equalizers. | |
|--|---|
| | covers use up to 12 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 13.800 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,00 hours/event |
| Fillers, Putties Modelling clay. | Covers concentrations up to 1 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 254,40 cm2 |
| | For each use event, assumes swallowed amount of 1 g |
| Finger paints | Covers concentrations up to 1,25 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 254,40 cm2 |
| | For each use event, assumes swallowed amount of 1,35 g |
| Non-metal-surface treatment products Waterborne latex wall paint. | Covers concentrations up to 1,5 % |
| istor trail painti | covers use up to 4 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 2.760 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,20 hours/event |
| Non-metal-surface treat- ment products Solvent rich, high solid, water borne paint. | Covers concentrations up to 27,5 % |
| | covers use up to 6 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 744 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,20 hours/event |
| Non-metal-surface treat- ment products Aerosol spray can. | Covers concentrations up to 50 % |
| 1 7 | covers use up to 2 day/year |
| | Covers use up to 1 times/day of use |
| | For each use event, covers amount up to 215 g |
| | Covers use in a one car garage (34 m3) under typical ventila- |
| | tion. |
| | Covers use in room size of 34 m3 |
| | Covers exposure up to 0,33 hours/event |
| Non-metal-surface treat- | Covers concentrations up to 50 % |

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| ment products Removers | |
|-------------------------------|---|
| (paint-, glue-, wall paper-, | |
| sealant-remover). | according to 2 day/year |
| | covers use up to 3 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 491 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,00 hours/event |
| Ink and toners | Covers concentrations up to 10 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 71,40 cm2 |
| | For each use event, covers amount up to 40 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,20 hours/event |
| Leather tanning, dye, finish- | Covers concentrations up to 50 % |
| ing, impregnation and care | · |
| products Polishes, wax / | |
| cream (floor, furniture, | |
| shoes). | |
| | covers use up to 29 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 430,00 cm2 |
| | For each use event, covers amount up to 56 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 1,23 hours/event |
| Leather tanning, dye, finish- | Covers concentrations up to 50 % |
| ing, impregnation and care | ар на об да |
| products Polishes, spray | |
| (furniture, shoes). | |
| (1000000) | covers use up to 8 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 430,00 cm2 |
| | For each use event, covers amount up to 56 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,33 hours/event |
| Lubricants, greases, re- | Covers concentrations up to 100 % |
| lease products Liquids. | Covers concentrations up to 100 /0 |
| | covers use up to 4 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 468,00 cm2 |
| | For each use event, covers amount up to 2.200 g |
| | Covers use in a one car garage (34 m3) under typical ventila- |
| | tion. |
| | Covers use in room size of 34 m3 |
| | Covers exposure up to 0,17 hours/event |
| | |

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| Lubricants, greases, re- | Covers concentrations up to 20 % |
|---|---|
| lease products Pastes. | 10.1 |
| | covers use up to 10 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 468,00 cm2 |
| | For each use event, covers amount up to 34 g |
| Lubricants, greases, re- | Covers concentrations up to 50 % |
| lease products Sprays. | |
| | covers use up to 6 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 73 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,17 hours/event |
| Polishes and wax blends Polishes, wax / cream (floor, furniture, shoes). | Covers concentrations up to 50 % |
| (, | covers use up to 29 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 430,00 cm2 |
| | For each use event, covers amount up to 142 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 1,23 hours/event |
| Polishes and wax blends Polishes, spray (furniture, shoes). | Covers concentrations up to 50 % |
| | covers use up to 8 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 430,00 cm2 |
| | For each use event, covers amount up to 35 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,33 hours/event |
| Textile dyes, finishing and impregnating products; including bleaches and other processing aids | Covers concentrations up to 10 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | |
| <u> </u> | covers skin contact area up to (cm2): 857,50 cm2 |
| | covers skin contact area up to (cm2): 857,50 cm2 For each use event, covers amount up to 115 g |
| | |
| | For each use event, covers amount up to 115 g |

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

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| Fraction of ELI tennage used in region: | 0.1 |
|--|------------------------|
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 5,0E+01 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 2,5E-02 |
| Maximum daily site tonnage (kg/day): | 6,9E-02 |
| Frequency and Duration of Use | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| Environmental factors not influenced by risk management | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| Other Operational Conditions affecting Environmental Exposure | |
| Release fraction to air from process (initial release prior to RMM): | 0,985 |
| Release fraction to wastewater from process (initial release prior to | 1,0E-02 |
| RMM): | |
| Release fraction to soil from process (initial release prior to RMM): | 5,0E-03 |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Risk from environmental exposure is driven by freshwater. | |
| Estimated substance removal from wastewater via domestic sewage | 94,6 |
| treatment (%) | |
| Maximum allowable site tonnage (MSafe) based on release following | 3,4E+01 |
| total wastewater treatment removal (kg/d) | |
| Assumed domestic sewage treatment plant flow (m3/d) | 2.000 |
| Conditions and Measures related to external treatment of waste fo | r disposal |
| External treatment and disposal of waste should comply with applicable | e local and/or region- |
| al regulations. | 3 |
| - | |
| Conditions and measures related to external recovery of waste | |

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

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

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

Section 3.2 - Environment

regulations.

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

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

Measures/Operational Conditions outlined in Section 2 are implemented.

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

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Section 4.2 -Environment

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

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Exposure Scenario - Consumer

| 20000004402 | |
|------------------|---|
| 30000001102 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use in Cleaning Agents - Consumer |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC3, PC4, PC8 (excipient only), PC9a, PC24, PC35, PC38 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.4c.v1 |
| Scope of process | Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products. |

| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES | |
|---|---|-----------|
| Section 2.1 | Control of Consumer Exposu | ire |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure > 10 kl | 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 | mount up to (g): | 13.800 |
| covers skin contact area (cm2): | | 857,5 |
| Frequency and Duration o | f Use | |
| Unless stated otherwise. | | |
| Covers use up to (days/year): | | 365 |
| covers use up to (times/day of use): | | 4 |
| Exposure (hours/event): | | 8 |
| Other Operational Condition | ons affecting Exposure | |
| Unless stated otherwise. | | |
| Covers use at ambient temp | eratures. | |

Covers use in room size of 20m3

| Product Categories | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES |
|--|---|
| Air care products Air care, instant action (aerosol sprays). | Covers concentrations up to 50 % |
| | covers use up to 365 day/year |
| | covers use up to 4 times/day of use |
| | For each use event, covers amount up to 0,1 g |
| | Covers use under typical household ventilation. |

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

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

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| covers exposure up to 0,17 hours/event covers concentrations up to 1,5 % covers use up to 4 day/year covers use up to 1 times/day of use covers skin contact area up to (cm2): 428,75 cm2 cor each use event, covers amount up to 2,760 g covers use under typical household ventilation. covers use in room size of 20 m3 covers exposure up to 2,2 hours/event lo specific risk management measure identified beyond covers concentrations up to 27,5 % |
|--|
| overs use up to 4 day/year covers use up to 1 times/day of use overs skin contact area up to (cm2): 428,75 cm2 or each use event, covers amount up to 2.760 g covers use under typical household ventilation. covers use in room size of 20 m3 covers exposure up to 2,2 hours/event lo specific risk management measure identified beyond nose operational conditions stated. |
| covers use up to 1 times/day of use overs skin contact area up to (cm2): 428,75 cm2 or each use event, covers amount up to 2.760 g covers use under typical household ventilation. covers use in room size of 20 m3 covers exposure up to 2,2 hours/event to specific risk management measure identified beyond nose operational conditions stated. |
| covers use up to 1 times/day of use overs skin contact area up to (cm2): 428,75 cm2 or each use event, covers amount up to 2.760 g covers use under typical household ventilation. covers use in room size of 20 m3 covers exposure up to 2,2 hours/event to specific risk management measure identified beyond nose operational conditions stated. |
| covers use up to 1 times/day of use overs skin contact area up to (cm2): 428,75 cm2 or each use event, covers amount up to 2.760 g covers use under typical household ventilation. covers use in room size of 20 m3 covers exposure up to 2,2 hours/event to specific risk management measure identified beyond nose operational conditions stated. |
| overs skin contact area up to (cm2): 428,75 cm2 or each use event, covers amount up to 2.760 g overs use under typical household ventilation. overs use in room size of 20 m3 overs exposure up to 2,2 hours/event lo specific risk management measure identified beyond nose operational conditions stated. |
| or each use event, covers amount up to 2.760 g overs use under typical household ventilation. overs use in room size of 20 m3 overs exposure up to 2,2 hours/event o specific risk management measure identified beyond nose operational conditions stated. |
| covers use under typical household ventilation. covers use in room size of 20 m3 covers exposure up to 2,2 hours/event lo specific risk management measure identified beyond nose operational conditions stated. |
| covers use in room size of 20 m3 covers exposure up to 2,2 hours/event lo specific risk management measure identified beyond nose operational conditions stated. |
| overs exposure up to 2,2 hours/event lo specific risk management measure identified beyond nose operational conditions stated. |
| o specific risk management measure identified beyond nose operational conditions stated. |
| nose operational conditions stated. |
| |
| overs concentrations up to 27,5 % |
| |
| |
| |
| overs use up to 5 day/year |
| covers use up to 1 times/day of use |
| overs use up to 1 times/day of use |
| overs skin contact area up to (cm2): 428,75 cm2 or each use event, covers amount up to 744 g |
| |
| overs use under typical household ventilation. |
| overs use in room size of 20 m3 |
| overs exposure up to 2,2 hours/event |
| o specific risk management measure identified beyond |
| nose operational conditions stated. |
| covers concentrations up to 50 % |
| |
| |
| overs use up to 6 day/year |
| overs use up to 1 times/day of use |
| overs skin contact area up to (cm2): 428,75 cm2 |
| or each use event, covers amount up to 744 g |
| overs use under typical household ventilation. |
| overs use in room size of 20 m3 |
| overs exposure up to No specific risk management meas- |
| re identified beyond those operational conditions stated. |
| ,33 hours/event |
| overs concentrations up to 50 % |
| |
| |
| |
| overs use up to 3 day/year |
| covers use up to 1 times/day of use |
| overs skin contact area up to (cm2): 857,50 cm2 |
| or each use event, covers amount up to 491 g |
| overs use under typical household ventilation. |
| covers use in room size of 20 m3 |
| covers exposure up to 2,00 hours/event |
| covers concentrations up to 100 % |
| 2.2.2 222011tt att 10 100 /0 |
| |

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| | acycra usa un ta A day/yaar |
|--|---|
| | covers use up to 4 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 468,00 cm2 |
| | For each use event, covers amount up to 2.200 g |
| | Covers use in a one car garage (34 m3) under typical ventilation. |
| | Covers use in room size of 34 m3 |
| | Covers exposure up to 0,17 hours/event |
| Lubricants, greases, release products Pastes. | Covers concentrations up to 20 % |
| | covers use up to 10 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 468,00 cm2 |
| | For each use event, covers amount up to 34 g |
| Lubricants, greases, release products Sprays. | Covers concentrations up to 50 % |
| | covers use up to 6 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 73 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,17 hours/event |
| Washing and cleaning products (including solvent based products) Laundry and dish washing products. | Covers concentrations up to 5 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 15 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,50 hours/event |
| Washing and cleaning products (including solvent based products) Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners). | Covers concentrations up to 5 % |
| | covers use up to 128 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 27 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,33 hours/event |
| 147 11 1 1 1 | |
| Washing and cleaning | Covers concentrations up to 15 % |

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| based products) Cleaners, trigger sprays (all purpose cleaners,sanitary products, glass cleaners). | |
|---|--|
| | covers use up to 128 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,00 cm2 |
| | For each use event, assumes swallowed amount of 35 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,17 hours/event |
| Welding and soldering products (with flux coatings or flux cores.), flux products | Covers concentrations up to 20 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | For each use event, covers amount up to 12 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 1,00 hours/event |

| Section 2.2 | Control of Environmental Exposure | |
|---|--|------------------------|
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used | in region: | 0,1 |
| Regional use tonnage (tonne | s/year): | 1,0E-01 |
| Fraction of Regional tonnage | used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/ | year): | 5,0E-05 |
| Maximum daily site tonnage (| kg/day): | 1,4E-04 |
| Frequency and Duration of | Use | |
| Continuous release. | | |
| Emission Days (days/year): | | 365 |
| | nfluenced by risk management | |
| Local freshwater dilution factor | or: | 10 |
| Local marine water dilution factor: | | 100 |
| | ns affecting Environmental Exposure | |
| Release fraction to air from process (initial release prior to RMM): | | 0,95 |
| Release fraction to wastewater from process (initial release prior to RMM): | | 2,5E-02 |
| Release fraction to soil from process (initial release prior to RMM): | | 2,5E-02 |
| Conditions and Measures r | elated to municipal sewage treatment p | olant |
| Risk from environmental expo | osure is driven by freshwater. | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | | 94,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | | 6,8E-02 |
| Assumed domestic sewage treatment plant flow (m3/d) | | 2,0E+03 |
| | elated to external treatment of waste fo | or disposal |
| External treatment and disposal regulations. | sal of waste should comply with applicable | e local and/or region- |

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Conditions and measures related to external recovery of waste

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

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 -Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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Exposure Scenario - Consumer

| Exposure occitatio - oons | |
|---------------------------|--|
| 30000001103 | |
| | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Lubricants - Consumer Low Environmental Release |
| Use Descriptor | Sector of Use: SU21 |
| _ | Product Categories: PC1, PC24, PC31 |
| | Environmental Release Categories: ERC9a, ERC9b, |
| | ESVOC SpERC 9.6d.v1 |
| | |
| 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 mainte- |
| | nance and disposal of waste oil. |
| | |

| SECTION 2 | OPERATIONAL CONDITIONS AN MEASURES | ID RISK MANAGEMENT |
|---|------------------------------------|--------------------|
| Section 2.1 | Control of Consumer Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure > 10 Pa | |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. | |
| | Covers concentration up to (%): 10 | 00 % |
| Amounts Used | | |
| Unless stated otherwise. | | |
| for each use event, covers a | mount up to (g): | 6.390 |
| covers skin contact area (cm2): | | 468 |
| Frequency and Duration of | Use | |
| Unless stated otherwise. | | |
| Covers use up to (days/year): | | 365 |
| covers use up to (times/day of use): | | 1 |
| Exposure (hours/event): 8 | | 8 |
| Other Operational Conditions affecting Exposure | | |
| Liniaga atatad athamisia | | |

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

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

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| | Covers exposure up to 4,00 hours/event | |
|--|--|--|
| Adhesives, sealants Glues | Covers exposure up to 4,00 hours/event Covers concentrations up to 30 % | |
| DIY-use (carpet glue, tile glue, wood parquet glue). | Govers concentrations up to 30 70 | |
| grace, me car pen que e grace, | covers use up to 1 day/year | |
| | Covers use up to 1 times/day of use | |
| | covers skin contact area up to (cm2): 110,00 cm2 | |
| | For each use event, covers amount up to 6.390 g | |
| | Covers use under typical household ventilation. | |
| | Covers use in room size of 20 m3 | |
| | Covers exposure up to 6,00 hours/event | |
| Adhesives, sealants Glue from spray. | Covers concentrations up to 30 % | |
| -1 -2 | covers use up to 6 day/year | |
| | Covers use up to 1 times/day of use | |
| | covers skin contact area up to (cm2): 35,73 cm2 | |
| | For each use event, covers amount up to 85,05 g | |
| | Covers use under typical household ventilation. | |
| | Covers use in room size of 20 m3 | |
| | Covers exposure up to 4,00 hours/event | |
| Adhesives, sealants Seal- | Covers concentrations up to 30 % | |
| ants. | · | |
| | covers use up to 365 day/year | |
| | Covers use up to 1 times/day of use | |
| | covers skin contact area up to (cm2): 35,73 cm2 | |
| | For each use event, covers amount up to 75 g | |
| | Covers use under typical household ventilation. | |
| | Covers use in room size of 20 m3 | |
| | Covers exposure up to 1,00 hours/event | |
| | Avoid using when windows closed. | |
| Lubricants, greases, release products Liquids. | Covers concentrations up to 100 % | |
| | covers use up to 4 day/year | |
| | Covers use up to 1 times/day of use | |
| | covers skin contact area up to (cm2): 468,00 cm2 | |
| | For each use event, covers amount up to 2.200 g | |
| | Covers use in a one car garage (34 m3) under typical ventila- | |
| | tion. | |
| | Covers use in room size of 34 m3 | |
| | Covers exposure up to 0,17 hours/event | |
| Lubricants, greases, release products Pastes. | Covers concentrations up to 20 % | |
| | covers use up to 10 day/year | |
| | Covers use up to 1 times/day of use | |
| | covers skin contact area up to (cm2): 468,00 cm2 | |
| | For each use event, covers amount up to 34 g | |
| | Covers exposure up to 4 hours/event | |
| Lubricants, greases, release products Sprays. | Covers concentrations up to 50 % | |
| | covers use up to 6 day/year | |
| - | Covers use up to 1 times/day of use | |

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| | covers skin contact area up to (cm2): 428,75 cm2 |
|--|--|
| | For each use event, covers amount up to 73 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,17 hours/event |
| Polishes and wax blends Polishes, wax / cream (floor, furniture, shoes). | Covers concentrations up to 50 % |
| (, | covers use up to 29 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 430,00 cm2 |
| | For each use event, covers amount up to 142 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 1,23 hours/event |
| Polishes and wax blends Cleaners, liquids (all pur- pose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners). | Covers concentrations up to 50 % |
| | covers use up to 8 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 430,00 cm2 |
| | For each use event, covers amount up to 35 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,33 hours/event |

| Section 2.2 | Control of Environmental Exposure | |
|---|--|---------|
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used | in region: | 0,1 |
| Regional use tonnage (tonnes | s/year): | 2,0 |
| Fraction of Regional tonnage | used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/) | /ear): | 2,0E+02 |
| Maximum daily site tonnage (| kg/day): | 2,7E-03 |
| Frequency and Duration of | Use | |
| Continuous release. | | |
| Emission Days (days/year): 3 | | 365 |
| Environmental factors not influenced by risk management | | |
| Local freshwater dilution factor: 10 | | 10 |
| Local marine water dilution factor: 100 | | 100 |
| Other Operational Conditions affecting Environmental Exposure | | |
| Release fraction to air from process (initial release prior to RMM): | | 1,0E-02 |
| Release fraction to wastewater from process (initial release prior to | | 1,0E-02 |
| RMM): | | |
| Release fraction to soil from process (initial release prior to RMM): 1,0E-02 | | |
| Conditions and Measures related to municipal sewage treatment plant | | |
| Risk from environmental exposure is driven by freshwater. | | |

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| Estimated substance removal from wastewater via domestic sewage treatment (%) | 94,6 |
|---|---------|
| Maximum allowable site tonnage (MSafe) based on release following 1,4 | |
| total wastewater treatment removal (kg/d) | |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 -Environment

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

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Exposure Scenario - Consumer

| 30000001105 | |
|-----------------------------------|---|
| SECTION 1 EXPOSURE SCENARIO TITLE | |
| Title | Lubricants - Consumer High Environmental Release |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC1, PC24, PC31 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.6e.v1 |
| Scope of process | Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil. |

| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES | |
|--|---|-------|
| Section 2.1 | Control of Consumer Exposure | • |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure > 10 Pa | |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. | |
| | Covers concentration up to (%): 1 | 00 % |
| Amounts Used Unless stated otherwise. for each use event, covers amount up to (g): 6.390 | | |
| | | |
| | | 6.390 |
| covers skin contact area (cm2): | | 468 |
| Frequency and Duration of Use Unless stated otherwise. Covers use up to (days/year): covers use up to (times/day of use): Exposure (hours/event): 8 | | |
| | | |
| | | 365 |
| | | 1 |
| | | 8 |
| Other Operational Conditions affecting Exposure | | |
| Halana at the Lattern Pro- | | |

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

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

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| | Covers exposure up to 4,00 hours/event | |
|---|--|--|
| Adhesives, sealants Glues | Covers concentrations up to 30 % | |
| DIY-use (carpet glue, tile | Govers concentrations up to 30 % | |
| glue, wood parquet glue). | | |
| giae, weed parduct giae). | covers use up to 1 day/year | |
| | Covers use up to 1 times/day of use | |
| | covers skin contact area up to (cm2): 110,00 cm2 | |
| | For each use event, covers amount up to 6.390 g | |
| | Covers use under typical household ventilation. | |
| | Covers use in room size of 20 m3 | |
| | Covers exposure up to 6,00 hours/event | |
| Adhesives, sealants Glue | Covers concentrations up to 30 % | |
| from spray. | Covers concentrations up to 50 70 | |
| пош эргау. | covers use up to 6 day/year | |
| | Covers use up to 1 times/day of use | |
| | covers skin contact area up to (cm2): 35,73 cm2 | |
| | For each use event, covers amount up to 85,05 g | |
| | Covers use under typical household ventilation. | |
| | Covers use in room size of 20 m3 | |
| | Covers exposure up to 4,00 hours/event | |
| Adhasiyaa saalanta Caal | Covers concentrations up to 30 % | |
| Adhesives, sealants Sealants. | Covers concentrations up to 50 % | |
| ants. | covers use up to 365 day/year | |
| | covers use up to 365 day/year Covers use up to 1 times/day of use | |
| | | |
| | covers skin contact area up to (cm2): 35,73 cm2 | |
| | For each use event, covers amount up to 75 g | |
| | Covers use under typical household ventilation. | |
| | Covers use in room size of 20 m3 | |
| | Covers exposure up to 1,00 hours/event | |
| 1.1.2 | Avoid using when windows closed. | |
| Lubricants, greases, re- lease products Liquids. | Covers concentrations up to 100 % | |
| | covers use up to 4 day/year | |
| | Covers use up to 1 times/day of use | |
| | covers skin contact area up to (cm2): 468,00 cm2 | |
| | For each use event, covers amount up to 2.200 g | |
| | Covers use in a one car garage (34 m3) under typical ventila- | |
| | tion. | |
| | Covers use in room size of 34 m3 | |
| | Covers exposure up to 0,17 hours/event | |
| Lubricants, greases, release products Pastes. | Covers concentrations up to 20 % | |
| - 1 | covers use up to 10 day/year | |
| | Covers use up to 1 times/day of use | |
| | covers skin contact area up to (cm2): 468,00 cm2 | |
| | For each use event, covers amount up to 34 g | |
| | Covers exposure up to 4 hours/event | |
| Lubricants, greases, re- | Covers concentrations up to 50 % | |
| lease products Sprays. | 22.2.2 23.132.11.3.13.13 ap 10 30 /0 | |
| | covers use up to 6 day/year | |
| | Covers use up to 1 times/day of use | |
| | 1 Corollo add ap to 1 millionady of add | |

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

| Section 2.2 | Control of Environmental Exposure | |
|---|---|---------|
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | Predominantly hydrophobic. | |
| Amounts Used | | |
| Fraction of EU tonnage used | in region: | 0,1 |
| Regional use tonnage (tonnes | s/year): | 2,0 |
| Fraction of Regional tonnage | used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/y | /ear): | 1,0E-03 |
| Maximum daily site tonnage (| | 2,7E-03 |
| Frequency and Duration of | Use | |
| Continuous release. | | |
| Emission Days (days/year): | | 365 |
| Environmental factors not influenced by risk management | | |
| Local freshwater dilution factor | or: | 10 |
| Local marine water dilution fa | | 100 |
| Other Operational Conditions affecting Environmental Exposure | | |
| Release fraction to air from pr | rocess (initial release prior to RMM): | 0,15 |
| Release fraction to wastewate RMM): | er from process (initial release prior to | 5,0E-02 |
| Release fraction to soil from p | process (initial release prior to RMM): | 5,0E-02 |
| Conditions and Measures related to municipal sewage treatment p | | olant |
| Risk from environmental expo | | |
| Estimated substance remova treatment (%) | from wastewater via domestic sewage | 94,6 |

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| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 1,4 |
|---|---------|
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E-03 |

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

Section 3.2 - Environment

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

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

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 - Environment

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

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Exposure Scenario - Consumer

| 30000001106 | | |
|------------------|---|--|
| SECTION 1 | EXPOSURE SCENARIO TITLE | |
| Title | Use in Agrochemicals uses - Consumer | |
| Use Descriptor | Sector of Use: SU21 Product Categories: , PC27 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.11b.v1 | |
| Scope of process | Covers the consumer use in agrochemicals in liquid and solid forms. | |

| SECTION 2 | OPERATIONAL CONDITIONS ANI MEASURES | D RISK MANAGEMENT |
|---|-------------------------------------|-------------------|
| Section 2.1 | Control of Consumer Exposure | |
| Product Characteristics | | |
| Physical form of product Liquid, vapour pressure > 10 Pa | | |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. | |
| | Covers concentration up to (%): 50 | % |
| Amounts Used Unless stated otherwise. | | |
| | | |
| covers skin contact area (cm2): | | 857,5 |
| Frequency and Duration of Use Unless stated otherwise. Covers use up to (days/year): covers use up to (times/day of use): 1 | | |
| | | |
| | | 365 |
| | | 1 |
| Exposure (hours/event): | | 4 |
| Other Operational Conditions affecting Exposure | | |

Other Operational Conditions affecting Exposure

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

| Product Categories | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES |
|---|---|
| Fertilizers Lawn and garden preparations. | Covers concentrations up to 15 % |
| | covers use up to 365 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, assumes swallowed amount of 0,3 g |
| | Covers exposure up to 4 hours/event |
| Plant protection products | Covers concentrations up to 15 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |

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| For each use event, assumes swallowed amount of 0,3 g |
|---|
| Covers exposure up to 4 hours/event |

| Section 2.2 | Control of Environmental Exposure | |
|---|--|------------------------|
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used | in region: | 0,1 |
| Regional use tonnage (tonnes | s/year): | 2,5E+01 |
| Fraction of Regional tonnage used locally: | | 2,0E-03 |
| Annual site tonnage (tonnes/year): | | 5,0E-02 |
| Maximum daily site tonnage (kg/day): | | 1,4E-01 |
| Frequency and Duration of | Use | |
| Continuous release. | | |
| Emission Days (days/year): | | 365 |
| Environmental factors not i | nfluenced by risk management | |
| Local freshwater dilution factor | or: | 10 |
| Local marine water dilution factor: | | 100 |
| | ns affecting Environmental Exposure | |
| | rocess (initial release prior to RMM): | 0,9 |
| Release fraction to wastewater from process (initial release prior to | | 1,0E-02 |
| RMM): | | |
| | process (initial release prior to RMM): | 9,0E-02 |
| | elated to municipal sewage treatment រុ | plant |
| Risk from environmental expo | | |
| | I from wastewater via domestic sewage | 94,6 |
| treatment (%) | (10.6) | |
| | age (MSafe) based on release following | 67 |
| total wastewater treatment re | | 0.05.00 |
| Assumed domestic sewage tr | | 2,0E+03 |
| | elated to external treatment of waste fo | - |
| al regulations. | sal of waste should comply with applicable | e local and/or region- |

Conditions and measures related to external recovery of waste

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

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

Section 3.2 - Environment

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

| SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE |
|---|
|---|

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EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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Exposure Scenario - Consumer

| 30000001107 | |
|------------------|---|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use as a fuel - Consumer |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC13 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.12c.v1 |
| Scope of process | Covers consumer uses in liquid fuels. |

| SECTION 2 | OPERATIONAL CONDITIONS AND MEASURES | RISK MANAGEMENT |
|---|---------------------------------------|-----------------|
| Section 2.1 | Control of Consumer Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure > 10 Pa | |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. | |
| | Covers concentration up to (%): 100 % | % |
| Amounts Used | | |
| Unless stated otherwise. | | |
| for each use event, covers amount up to (g): | | 37.500 |
| covers skin contact area (cm2): | | 420 |
| Frequency and Duration o | f Use | |
| Unless stated otherwise. | | |
| Covers use up to (days/year): | | 365 |
| covers use up to (times/day | of use): | 0,143 |
| Exposure (hours/event): | | 2 |
| Other Operational Condition | ons affecting Exposure | |

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

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

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

| Section 2.2 | Control of Environmental Exposure | 9 |
|--|-----------------------------------|---------|
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in region: 0,1 | | 0,1 |
| Regional use tonnage (tonnes/year): | | 1,7E+02 |
| Fraction of Regional tonnage | used locally: | 5,0E-04 |

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| Annual site tonnage (tonnes/year): | 8,6E-02 |
|---|------------|
| Maximum daily site tonnage (kg/day): | 2,3E-01 |
| Frequency and Duration of Use | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| Environmental factors not influenced by risk management | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| Other Operational Conditions affecting Environmental Exposure | |
| Release fraction to air from process (initial release prior to RMM): | 1,0E-04 |
| Release fraction to wastewater from process (initial release prior to | 1,0E-05 |
| RMM): | |
| Release fraction to soil from process (initial release prior to RMM): | 1,0E-05 |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Risk from environmental exposure is driven by freshwater. | |
| Estimated substance removal from wastewater via domestic sewage | 94,6 |
| treatment (%) | |
| Maximum allowable site tonnage (MSafe) based on release following | 1,2E+02 |
| total wastewater treatment removal (kg/d) | |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste fo | r disposal |
| Combustion emissions limited by required exhaust emission controls. | |
| Waste combustion emissions considered in regional exposure assessm | nent. |
| | |
| Conditions and measures related to external recovery of waste | |
| This substance is consumed during use and no waste of substance is g | generated. |

| SECTION 3 | EXPOSURE ESTIMATION |
|-----------|---------------------|

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 | |

Section 4.1 - Health

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

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

Section 4.2 -Environment

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

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measures.

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Exposure Scenario - Consumer

| 30000001108 | |
|------------------|---|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Functional Fluids - Consumer |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC16, PC17 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.13c.v1 |
| Scope of process | Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants. |

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

Other Operational Conditions affectif

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

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

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

| Section 2.2 Control of Environmental Exposure | | |
|---|--|------------------------|
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in region: | | 0,1 |
| Regional use tonnage (tonnes/year): | | 1,0E+03 |
| Fraction of Regional tonnage used locally: | | 5,0E-04 |
| Annual site tonnage (tonnes/year): | | 5,0E-04 |
| Maximum daily site tonnage (| kg/day): | 1,4E-03 |
| Frequency and Duration of | Use | |
| Continuous release. | | |
| Emission Days (days/year): | | 365 |
| | nfluenced by risk management | |
| Local freshwater dilution factor: | | 10 |
| Local marine water dilution factor: | | 100 |
| | ns affecting Environmental Exposure | |
| | rocess (initial release prior to RMM): | 5,0E-02 |
| Release fraction to wastewater from process (initial release prior to | | 2,5E-02 |
| RMM): | | |
| Release fraction to soil from process (initial release prior to RMM): 2,5E-02 | | |
| | elated to municipal sewage treatment p | lant |
| Risk from environmental expo | • | |
| Estimated substance removal from wastewater via domestic sewage | | 94,6 |
| treatment (%) | | |
| Maximum allowable site tonnage (MSafe) based on release following | | 6,8E-01 |
| total wastewater treatment removal (kg/d) | | 2.5 |
| Assumed domestic sewage treatment plant flow (m3/d) 2,0E+03 | | |
| | elated to external treatment of waste fo | |
| External treatment and dispose | sal of waste should comply with applicable | e local and/or region- |

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

Conditions and measures related to external recovery of waste

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

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

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Section 3.2 - Environment

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

| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE |
|-----------|---------------------------------------|
| | EXPOSURE SCENARIO |

Section 4.1 - Health

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

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

Section 4.2 -Environment

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