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

1.1 Product identifier

Trade name : ShellSol A150

Product code : Q7493

Registration number EU : 01-2119463588-24-0002

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

EC-No. : 919-284-0

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.

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

plier.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier : Shell Chemicals Europe B.V.

PO Box 2334 3000 CH Rotterdam

Netherlands

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

Contact for Safety Data : sccmsds@shell.com

Sheet

1.4 Emergency telephone number

+44 (0) 1235 239 670

National Poison Information Centre (NVIC): Tel. nr. +31(0)88 755 8000 (24 hrs a day and 7

days a week).

Only for the purpose of informing medical personnel.

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)

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

ways.

Specific target organ toxicity - single ex-

posure, Category 3, Narcotic effects

H336: May cause drowsiness or dizziness.

Carcinogenicity, Category 2 H351: Suspected of causing cancer.

Long-term (chronic) aquatic hazard, Cat-

egory 2

H411: Toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements EUH066: Repeated exposure may cause skin dry-

ness or cracking.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms







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.H351 Suspected of causing cancer.

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:

P201 Obtain special instructions before use.

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

Response:

P301 + P310 IF SWALLOWED: Immediately call a POISON

CENTER/ doctor.

P331 Do NOT induce vomiting.

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

attention.

Storage:

No precautionary phrases.

Disposal:

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

2.3 Other hazards

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

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

May form flammable/explosive vapour-air mixture.

This material is a static accumulator.

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

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

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 | 919-284-0 | |

Further information

Contains:

| Chemical name | Identification number | Classification | Concentration (% w/w) |
|---------------|-----------------------|--|-----------------------|
| Naphthalene | 91-20-3, 202-049-5 | Acute Tox.4; H302 Carc.2; H351 Aquatic Acute1; H400 Aquatic Chronic1; H410 | 0 - 10 |
| Cumene | 98-82-8, 202-704-5 | Flam. Liq.3; H226 Asp. Tox.1; H304 STOT SE3; H335 Carc.1B; H350 Aquatic Chronic2; H411 | 0 - 0,099 |
| Benzene | 71-43-2, 200-753-7 | Flam. Liq.2; H225 Asp. Tox.1; H304 Skin Irrit.2; H315 Eye Irrit.2; H319 Muta.1B; H340 Carc.1A; H350 | 0 - 0,01 |

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| | STOT DE1: H272 | |
|--|--|--|
| | STOT RE1; H372 Aquatic Chronic3; H412 | |
| | Aquatic Chronics; H412 | |
| | | |

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.

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

rinsina.

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, light-headedness, 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-

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

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

congestion, shortness of breath, and/or fever.

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

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

4.3 Indication of any immediate medical attention and special treatment needed

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

Potential for chemical pneumonitis.

Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

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

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

Unsuitable extinguishing

media

Do not use water in a jet.

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

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

A complex mixture of airborne solid and liquid particulates and

gases (smoke). Carbon monoxide.

Unidentified organic and inorganic compounds.

Flammable vapours may be present even at temperatures

below the flash point.

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

distant ignition is possible.

Will float and can be reignited on surface water.

5.3 Advice for firefighters

Special protective equipment :

for firefighters

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

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

Specific extinguishing meth-

ods

Standard procedure for chemical fires.

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

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions

Observe all relevant local and international regulations.

Notify authorities if any exposure to the general public or the

environment occurs or is likely to occur.

Local authorities should be advised if significant spillages

cannot be contained.

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

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

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

Avoid contact with skin, eyes and clothing.

Isolate hazard area and deny entry to unnecessary or unpro-

tected personnel.

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

6.2 Environmental precautions

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

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

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

6.3 Methods and material for containment and cleaning up

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

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

contaminated soil and dispose of safely.

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

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Ventilate contaminated area thoroughly.

If contamination of site occurs remediation may require spe-

cialist advice.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

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

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

Section 8 of this Safety Data Sheet.

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

material.

Ensure that all local regulations regarding handling and stor-

age facilities are followed.

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

Avoid contact with skin, eyes and clothing.

Extinguish any naked flames. Do not smoke. Remove ignition

sources. Avoid sparks.

Use local exhaust ventilation if there is risk of inhalation of

vapours, mists or aerosols.

Bulk storage tanks should be diked (bunded).

When using do not eat or drink.

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

distant ignition is possible.

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

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

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Refer to guidance under Handling section.

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

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

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

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

ering the packaging and storage of this product.

Further information on storage stability

Storage Temperature:

Ambient.

Bulk storage tanks should be diked (bunded).

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

strict procedures and precautions.

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

harmful or toxic to man or to the environment.

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

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

ble.

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

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

zinc silicate paint.

Unsuitable material: Avoid prolonged contact with natural,

butyl or nitrile rubbers.

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

near containers.

7.3 Specific end use(s)

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

tered uses under REACH.

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

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SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

| Components | CAS-No. | Value type (Form of exposure) | Control parameters | Basis |
|-------------|---------------------------|-------------------------------|---|---|
| Naphthalene | 91-20-3 | TLV-8hr | 10 ppm 50 mg/m3 | NL WG |
| Naphthalene | | TLV-15 min | 16 ppm 80 mg/m3 | NL WG |
| Naphthalene | | TWA | 10 ppm 50 mg/m3 | 91/322/EEC |
| | Further info | rmation: Indicative | | |
| Cumene | 98-82-8 | TLV-8hr | 10 ppm 50 mg/m3 | NL WG |
| | Further info | rmation: Skin notation | | |
| Cumene | | TLV-15 min | 50 ppm 250 mg/m3 | NL WG |
| | Further info | rmation: Skin notation | | |
| Cumene | | TWA | 10 ppm 50 mg/m3 | 2019/1831/E U |
| | | | on assigned to the occupa of significant uptake thro | |
| Cumene | | STEL | 50 ppm 250 mg/m3 | 2019/1831/E U |
| | | | on assigned to the occupa of significant uptake thro | |
| Benzene | 71-43-2 | TLV-8hr | 0,2 ppm 0,7 mg/m3 | NL WG |
| | Further info effect, Skin | | substances, based on the | e thresholdlimit |
| Benzene | | TWA | 0,25 ppm 0,8 mg/m3 | Shell Internal Standard (SIS) for 8-12 hour TWA. |
| Benzene | | STEL | 2,5 ppm 8 mg/m3 | Shell Internal Standard (SIS) for 15 min (STEL) |

Biological occupational exposure limits

No biological limit allocated.

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

| Substance name | End Use | Exposure routes | Potential health effects | Value |
|--------------------|---------|-----------------|--------------------------|------------|
| Hydrocarbons, C10, | Workers | Dermal | Long-term systemic | 12,5 mg/kg |

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| aromatics, >1% naph- thalene | | | effects | bw/day |
|--|-----------|------------|----------------------------|---------------------|
| Hydrocarbons, C10, aromatics, >1% naph-thalene | Workers | Inhalation | Long-term systemic effects | 151 mg/m3 |
| Hydrocarbons, C10, aromatics, >1% naphthalene | Consumers | Oral | Long-term systemic effects | 7,5 mg/kg bw/day |
| Hydrocarbons, C10, aromatics, >1% naphthalene | Consumers | Inhalation | Long-term systemic effects | 32 mg/m3 |
| Hydrocarbons, C10, aromatics, >1% naph-thalene | Consumers | Dermal | Long-term systemic effects | 7,5 mg/kg bw/day |
| Naphthalene | Consumers | Oral | Long-term systemic effects | 4,23 mg/kg |
| Benzene | Workers | Inhalation | Long-term systemic effects | 0,8 mg/m3/ 8h |

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

| Substance name | Environmental Compartment | Value |
|----------------|--|-------|
| Remarks: | e is a hydrocarbon with a complex, unknown or rentional methods of deriving PNECs are not a | |
| | ole to identify a single representative PNEC for | |

8.2 Exposure controls

Engineering measures

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

Use sealed systems as far as possible.

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

Local exhaust ventilation is recommended.

Firewater monitors and deluge systems are recommended.

Eye washes and showers for emergency use.

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

General Information:

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

Define procedures for safe handling and maintenance of controls.

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

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

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

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

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Personal protective equipment

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

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

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

protective eyewear is recommended. Approved to EU Standard EN166.

Hand protection

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

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

rubber Nitrile rubber gloves.

Incidental contact/Splash protection: Nitrile rubber gloves. For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is no

may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moistur-

izer is recommended.

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

For prolonged or repeated exposures use impervious clothing

over parts of the body subject to exposure.

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

Protective clothing approved to EU Standard EN14605.

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

assessment deems it so.

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

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

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

pour point : < 20 °C

Melting point/freezing point Data not available

Boiling point/boiling range : 179 - 214 °C

Flammability

Flammability (solid, gas) : Data not available

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit / upper flammability limit

7 %(V)

Lower explosion limit / Lower flammability limit

0,6 %(V)

Flash point : Typical 62 - 65,6 °C

Method: ASTM D-93 / PMCC

Auto-ignition temperature : 449 - 510 °C

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Method: ASTM E-659

Decomposition temperature

Decomposition tempera-

ture

Not applicable

pH : Not applicable

Viscosity

Viscosity, dynamic : Data not available

Viscosity, kinematic : Typical 1,2 mm2/s (25 °C)

Method: ASTM D445

Solubility(ies)

Water solubility : insoluble

Partition coefficient: n-

octanol/water

Data not available

Vapour pressure : 0,09 kPa (20 °C)

Relative density : 0,88 - 0,91 (20 °C)

Method: ASTM D4052

Density : Typical 893 kg/m3 (15 °C)

Method: ASTM D4052

Relative vapour density : 4,8

Particle characteristics

Particle size : Data not available

9.2 Other information

Explosive properties : Not applicable

Oxidizing properties : Data not available

Evaporation rate : 1,0

Method: ASTM D 3539, nBuAc=1

Conductivity: < 100 pS/m

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

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Surface tension : Data not available

Molecular weight : Data not available

SECTION 10: Stability and reactivity

10.1 Reactivity

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

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

10.4 Conditions to avoid

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

In certain circumstances product can ignite due to static elec-

tricity.

10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.

10.6 Hazardous decomposition products

Hazardous decomposition products are not expected to form during normal storage. Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxida-

tive 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

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

Remarks: Low toxicity if inhaled.

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

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.

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| Material | GHS/CLP Carcinogenicity Classification |
|---|--|
| Hydrocarbons, C10, aromatics, >1% naphthalene | Carcinogenicity Category 2 |
| Naphthalene | Carcinogenicity Category 2 |
| Cumene | Carcinogenicity Category 1B |
| Benzene | Carcinogenicity Category 1A |

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

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Aspiration toxicity

Components:

Hydrocarbons, C10, aromatics, >1% naphthalene:

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

11.2 Information on other hazards

Endocrine disrupting properties

Product:

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

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

levels of 0.1% or higher.

Further information

Product:

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

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

ponent(s).

Components:

Hydrocarbons, 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

Toxicity to daphnia and other :

aquatic invertebrates

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

Toxic

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

Toxic

Toxicity to microorganisms

Remarks: Data not available

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Toxicity to fish (Chronic tox-

icity)

tv)

Toxicity to daphnia and other : aquatic invertebrates (Chron-

ic toxicity)

Remarks: Data not available

Remarks: Data not available

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:

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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.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Recover or recycle if possible.

It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.

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

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

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

Waste, spills or used product is dangerous waste.

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

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

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

Contaminated packaging

Drain container thoroughly.

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

Send to drum recoverer or metal reclaimer.

Comply with any local recovery or waste disposal regulations.

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SECTION 14: Transport information

14.1 UN number or ID number

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

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)

CDNI Inland Water Waste : NST 8963 Solvent

Agreement

ADR

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

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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

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 - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) Conditions of restriction for the following entries should be considered: Cumene (Number on list 28)
Benzene (Number on list 72, 5, 29,

28)

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

(Annex XIV) tion under REACH.

REACH - Candidate List of Substances of Very High : This product does not contain sub-Concern for Authorisation (Article 59). : stances of very high concern (Regu

stances of very high concern (Regulation (EC) No 1907/2006 (REACH),

Article 57).

Other regulations:

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

Product is subject to Major accident risk decision 2015 (BRZO+) based on Seveso III directive (2012/18/EU).

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

Product meets one or more criteria set for the Dutch list of 'substances of concern' (zeer zorgwekkende stoffen (ZZS)).

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

DSL : Listed

IECSC : Listed

KECI : Listed

PICCS : Listed

TSCA : Listed

ENCS : Listed

NZIoC : Listed

TCSI : Listed

15.2 Chemical safety assessment

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

SECTION 16: Other information

Full text of other abbreviations

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

fifth list of indicative occupational exposure limit values

91/322/EEC : Europe. Commission Directive 91/322/EEC on establishing

indicative limit values

NL WG : Netherlands. Law on Labour conditions - Occupational Expo-

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sure Limits

2019/1831/EU / TWA : Limit Value - eight hours 2019/1831/EU / STEL : Short term exposure limit 91/322/EEC / TWA : Limit Value - eight hours NL WG / TLV-8hr : Time Weighted Average NL WG / TLV-15 min : Short Term Exposure Limit

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

Further information

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

erators.

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

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

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

ered to be PBT or vPvB.

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

from the previous version.

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

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

Sources of key data used to compile the Safety Data Sheet

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

Identified Uses according to the Use Descriptor System

Uses - Worker

Title Use in laboratories

- Professional

Uses - Worker

Title Use in laboratories

- Industrial

Uses - Worker

Title Road and construction applications

- Professional

Uses - Worker

Title **Functional Fluids**

- Professional

Uses - Worker

Title **Functional Fluids**

- Industrial

Uses - Worker

Title Use as a fuel

Professional

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Uses - Worker

Title : Use as a fuel

- Industrial

Uses - Worker

Title : Use in Agrochemicals uses

- Professional

Uses - Worker

Title : Use as binders and release agents

- Professional

Uses - Worker

Title : Use as binders and release agents

- Industrial

Uses - Worker

Title : Metal working fluids / rolling oils

- Professional

Uses - Worker

Title : Metal working fluids / rolling oils

- Industrial

Uses - Worker

Title : Lubricants

- Professional

High Environmental Release

Uses - Worker

Title : Lubricants

- Professional

Low Environmental Release

Uses - Worker

Title : Lubricants

- Industrial

Uses - Worker

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

- Industrial

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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

- Industrial

Uses - Worker

Title : Manufacture of substance

- Industrial

Uses - Worker

Title : Distribution of substance

- Industrial

Uses - Worker

Title : Water treatment chemicals

- Industrial

Uses - Worker

Title : Water treatment chemicals

- Professional

Identified Uses according to the Use Descriptor System

Uses - Consumer

Title : Functional Fluids

- Consumer

Uses - Consumer

Title : Use as a fuel

- Consumer

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Uses - Consumer

Title : Use in Agrochemicals uses

- Consumer

Uses - Consumer

Title : Lubricants

Consumer

High Environmental Release

Uses - Consumer

Title : Lubricants

- Consumer

Low Environmental Release

Uses - Consumer

Title : Use in Cleaning Agents

- Consumer

Uses - Consumer

Title : Uses in Coatings

- Consumer

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.

NL / EN

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Exposure Scenario - Worker

| 30000000780 | |
|------------------|---|
| 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 | K MANAGEMENT | |
|---|--|------------------------|--|
| 020110N 2 | MEASURES | | |
| Section 2.1 | Control of Worker Exposure | | |
| Product Characteristics | | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STF | | |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 1 differently)., | 00% (unless stated | |
| Frequency and Duration of | | | |
| | 8 hours (unless stated differently). | | |
| Other Operational Condition | | | |
| Assumes use at not more tha | n 20°C above ambient temperature (unles | s stated differently). | |
| Assumes a good basic standa | ard of occupational hygiene is implemente | d. | |
| 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 (tonnes | s/year): | 0,6 | |
| Fraction of Regional tonnage | used locally: | 5,0E-04 | |
| Annual site tonnage (tonnes/y | | 3,0E-04 | |
| Maximum daily site tonnage (| imum daily site tonnage (kg/day): 8,2E-04 | | |
| Frequency and Duration of | Use | | |
| Continuous release. | | | |
| Emission Days (days/year): 365 | | 365 | |
| Environmental factors not influenced by risk management | | | |
| Local freshwater dilution factor: 10 | | | |
| Local marine water dilution factor: 100 | | | |
| Other Operational Conditions 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 pro- | event release | |
| Common practices vary across sites thus conservative process re- | | |
| lease estimates used. | | |
| Technical onsite conditions and measures to reduce or limit discharge | arges, air emis- | |
| sions and releases to soil | | |
| Risk from environmental exposure is driven by freshwater. | | |
| No wastewater treatment required. | | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 | |
| Treat onsite wastewater (prior to receiving water discharge) to provide | 0 | |
| the required removal efficiency of >= (%) | | |
| If discharging to domestic sewage treatment plant, no secondary | 0 | |
| wastewater treatment required. | | |
| Organisational measures to prevent/limit release from site | | |
| Do not apply industrial sludge to natural soils. | | |
| Sludge should be incinerated, contained or reclaimed. | | |
| Conditions and Measures related to municipal sewage treatment p | lant | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 94,6 | |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 94,6 | |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 2,1E-01 | |
| 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 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 | |

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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

| Expedit decitate transci | | |
|--------------------------|---|--|
| 3000000779 | | |
| 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. | |

| OFOTION 6 | | |
|---|--|--------------------------|
| SECTION 2 | OPERATIONAL CONDITIONS AND R MEASURES | ISK MANAGEMENT |
| Section 2.1 | Control of Worker Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at ST | ГР |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., | |
| Frequency and Duration of | Use | |
| | 8 hours (unless stated differently). | |
| Other Operational Conditio | ns affecting Exposure | |
| | an 20°C above ambient temperature (unle | ess stated differently). |
| | ard of occupational hygiene is implement | |
| 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 (tonnes/year): | | 0,6 |
| Fraction of Regional tonnage used locally: | | 1 |
| Annual site tonnage (tonnes/year): | | 0,6 |
| Maximum daily site tonnage | (kg/day): | 30 |
| Frequency and Duration of | Use | |
| Continuous release. | | |
| Emission Days (days/year): | | 20 |
| | influenced by risk management | |
| Local freshwater dilution factor: 10 | | |
| Local marine water dilution factor: 100 | | 100 |
| Other Operational Conditions affecting Environmental Exposure | | |
| Release fraction to air from p | rocess (initial release prior to RMM): | 2,5E-02 |

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| Release fraction to wastewater from process (initial release prior to RMM): | 2,0E-02 |
|---|--|
| Release fraction to soil from process (initial release prior to RMM): | 1,0E-04 |
| Technical conditions and measures at process level (source) to pro- | event release |
| Common practices vary across sites thus conservative process re- | |
| lease estimates used. | |
| Technical onsite conditions and measures to reduce or limit discharge | arges, air emis- |
| sions and releases to soil | |
| Risk from environmental exposure is driven by freshwater sediment. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary | 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 | 94,6 |
| (domestic treatment plant) RMMs (%) | 0 1,0 |
| Maximum allowable site tonnage (MSafe) based on release following | 1,3E+03 |
| total wastewater treatment removal (kg/d) | 1,02.00 |
| 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. | 2 2 2 2 2 2 2 2 2 2 2 3 2 3 2 3 2 3 2 3 |
| | |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable | local and/or regional |
| regulations. | 3 |
| • | |

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

Section 3.2 - Environment

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

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

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Measures/Operational Conditions outlined in Section 2 are implemented.

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

Section 4.2 - Environment

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

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

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

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

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Exposure Scenario - Worker

| 30000000789 | 30000000789 | |
|------------------|---|--|
| SECTION 1 | EXPOSURE SCENARIO TITLE | |
| Title | Road and construction applications- Professional | |
| Use Descriptor | Sector of Use: SU22 Process Categories: PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 11, PROC 13 Environmental Release Categories: ERC8d, ERC8f, ESVOC SpERC 8.15.v1 | |
| Scope of process | Application of surface coatings and binders in road and construction activities, including paving uses, manual mastic and in the application of roofing and water-proofing membranes. | |

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

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| chine applicationPROC11 | Wear a respirator conforming to EN140 v better. | vith Type A filter or |
|--|---|-----------------------|
| Dipping, immersion and pouringPROC13 | No other specific measures identified. | |
| Equipment cleaning and maintenancePROC8a | No other specific measures identified. | |
| Drum and small package fillingPROC9 | 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 | | 12 |
| Fraction of Regional tonnage | | 5,0E-04 |
| Annual site tonnage (tonnes/ | | 6,1E-03 |
| Maximum daily site tonnage | | 1,7E-02 |
| Frequency and Duration of | | 1 .,. = 0= |
| Continuous release. | | |
| Emission Days (days/year): | | 365 |
| | nfluenced by risk management | 1 000 |
| Local freshwater dilution factor | · | 10 |
| Local marine water dilution fa | | 100 |
| Other Operational Conditions affecting Environmental Exposure | | |
| Release fraction to air from process (initial release prior to RMM): 0,95 | | 0.95 |
| Release fraction to wastewater from process (initial release prior to RMM): | | |
| , | process (initial release prior to RMM): | 4,0E-02 |
| | neasures at process level (source) to pro- | event release |
| Common practices vary across sites thus conservative process release estimates used. | | |
| | s and measures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | | |
| | osure is driven by freshwater. | |
| No wastewater treatment req | | |
| Treat air emission to provide a typical removal efficiency of (%) | | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide 0 | | 0 |
| the required removal efficiency of >= (%) | | |
| If discharging to domestic sev | wage treatment plant, no secondary | 0 |
| wastewater treatment require | | |
| | prevent/limit release from site | |
| Do not apply industrial sludge | | |
| Sludge should be incinerated | , contained or reclaimed. | |
| Conditions and Measures r | elated to municipal sewage treatment p | lant |
| | I from wastewater via domestic sewage | 94,6 |
| treatment (%) | | |
| Total efficiency of removal fro (domestic treatment plant) RI | om wastewater after onsite and offsite MMs (%) | 94,6 |
| | age (MSafe) based on release following | 4,6 |
| | | |

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| total wastewater treatment removal (kg/d) | |
|---|---------|
| Assumed domestic sewage treatment plant flow (m3/d) | 4,3E+00 |

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

indicated.

Section 3.2 - Environment

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

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

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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

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Exposure Scenario - Worker

| 30000000778 | |
|------------------|---|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Functional Fluids- Professional |
| Use Descriptor | Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 3, PROC 8a, PROC 9, PROC 20 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.13b.v1 |
| Scope of process | Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in professional equipment including maintenance and related material transfers. |

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

Contributing Scenarios Risk Management Measures

| Contributing Scenarios R | isk wanagement weasures |
|---|--|
| Drum/batch transfersPROC8a | No other specific measures identified. |
| Transfer from/pouring from containersPROC9 | No other specific measures identified. |
| Filling/ preparation of equipment from drums or containers.PROC9 | No other specific measures identified. |
| General exposures (closed systems)PROC1PROC2PROC3 | No other specific measures identified. |
| Operation of equipment containing engine oils and similar.(closed systems)PROC20 | No other specific measures identified. |
| Operation of equipment containing engine oils and similar. (closed systems) 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 | I | | | |
|--|--|-------------------|--|--|
| Equipment maintenance- | No other specific measures identified | 1 | | |
| PROC8a | · | | | |
| Storage.PROC1PROC2 | Store substance within a closed syst | em. | | |
| Section 2.2 Control of Environmental Exposure | | | | |
| Substance is complex UVCB. | - | | | |
| Predominantly hydrophobic. | | | | |
| Amounts Used | | | | |
| Fraction of EU tonnage used in re | egion: | 0,1 | | |
| Regional use tonnage (tonnes/ye | | 3,0 | | |
| Fraction of Regional tonnage use | | 5,0E-04 | | |
| Annual site tonnage (tonnes/year | | 1,5E-03 | | |
| Maximum daily site tonnage (kg/d | | 4,1E-03 | | |
| Frequency and Duration of Use | | ., | | |
| Continuous release. | | | | |
| Emission Days (days/year): | | 365 | | |
| Environmental factors not influ | enced by risk management | 300 | | |
| Local freshwater dilution factor: | choca by hok management | 10 | | |
| Local marine water dilution factor | • | 100 | | |
| | ffecting Environmental Exposure | 100 | | |
| Release fraction to air from proce | | 5,0E-02 | | |
| | om process (initial release prior to | 2,5E-02 | | |
| RMM): | on process (initial release prior to | 2,5L-02 | | |
| Release fraction to soil from proc | ess (initial release prior to RMM): | 2,5E-02 | | |
| Technical conditions and meas | ures at process level (source) to pr | event release | | |
| Common practices vary across si lease estimates used. | tes thus conservative process re- | | | |
| | d measures to reduce or limit disch | orgos oir omis | | |
| sions and releases to soil | u measures to reduce or minit discri | arges, air erris- | | |
| Risk from environmental exposure | e is driven by freshwater. | | | |
| No wastewater treatment required | d. | | | |
| Treat air emission to provide a typ | pical removal efficiency of (%) | 0 | | |
| Treat onsite wastewater (prior to the required removal efficiency of | receiving water discharge) to provide | 0 | | |
| If discharging to domestic sewage | | 0 | | |
| wastewater treatment required. | | | | |
| Organisational measures to pre | | | | |
| Do not apply industrial sludge to r | | | | |
| Sludge should be incinerated, con | | | | |
| Conditions and Measures relate | ed to municipal sewage treatment p | lant | | |
| | n wastewater via domestic sewage | 94,6 | | |
| treatment (%) | | ,- | | |
| Total efficiency of removal from w | 94,6 | | | |
| (domestic treatment plant) RMMs | - ',- | | | |
| Maximum allowable site tonnage | 1,1 | | | |
| total wastewater treatment remov | ',' | | | |
| Assumed domestic sewage treatr | 2,0E+03 | | | |
| | ed to external treatment of waste fo | | | |
| | of waste should comply with applicable | | | |
| | | | | |

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regulations.

Conditions and measures related to external recovery of waste

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

| SECTION 3 | EXPOSURE ESTIMATION |
|-----------|----------------------------|
| 3201013 | LAI OSONE ESTIMATION |

Section 3.1 - Health

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

Section 3.2 - Environment

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

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

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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| Exposure oceriario - W | orker |
|------------------------|---|
| 30000000777 | |
| 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 | Control of the transfer and the transfer |
| 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 | |
| | in 20°C above ambient temperature (unless stated differently). |
| Assumes a good basic stand | ard of occupational hygiene is implemented. |
| Contributing Scenarios | Risk Management Measures |
| Bulk transfers(closed systems)PROC1PROC2 | No other specific measures identified. |
| Drum/batch transfersDedicated facilityPROC8b | No other specific measures identified. |
| Filling of arti- cles/equipment(closed sys- tems)PROC9 | No other specific measures identified. |
| Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a | No other specific measures identified. |
| General exposures (closed systems)PROC2 | No other specific measures identified. |
| General exposures (open systems)PROC4 | No other specific measures identified. |
| Remanufacture of reject articlesPROC9 | No other specific measures identified. |
| Equipment maintenance- PROC8a | No other specific measures identified. |

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| Store substance within a closed system. | | | | |
|---|--|--|--|--|
| Control of Environmental Exposure | | | | |
| | | | | |
| | | | | |
| | | | | |
| Amounts Used | | | | |
| Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year): | | | | |
| | 3,0 | | | |
| Fraction of Regional tonnage used locally: | | | | |
| Annual site tonnage (tonnes/year): Maximum daily site tonnage (kg/day): | | | | |
| | 150 | | | |
| Use | T | | | |
| | | | | |
| | 20 | | | |
| nfluenced by risk management | | | | |
| or: | 10 | | | |
| ctor: | 100 | | | |
| ns affecting Environmental Exposure | • | | | |
| | 5,0E-03 | | | |
| | 3,0E-05 | | | |
| or mem precess (imilar releases prior to | 0,02 00 | | | |
| process (initial release prior to RMM): | 1,0E-03 | | | |
| peasures at process level (source) to pro | | | | |
| | | | | |
| ss sites thus conservative process re- | | | | |
| and measures to reduce or limit discha | arges, air emis- | | | |
| osure is driven by freshwater. | | | | |
| | | | | |
| | | | | |
| | | | | |
| uired. | | | | |
| uired. | 0 | | | |
| a typical removal efficiency of (%) | 0 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide | 0 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide cy of >= (%) | 0 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary | _ | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide by of >= (%) wage treatment plant, no secondary d. | 0 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide by of >= (%) wage treatment plant, no secondary d. p prevent/limit release from site | 0 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary d. prevent/limit release from site e to natural soils. | 0 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide by of >= (%) wage treatment plant, no secondary d. p prevent/limit release from site | 0 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide by of >= (%) wage treatment plant, no secondary d. prevent/limit release from site to natural soils. , contained or reclaimed. | 0 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary d. prevent/limit release from site to natural soils. contained or reclaimed. elated to municipal sewage treatment p | 0 0 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide by of >= (%) wage treatment plant, no secondary d. prevent/limit release from site to natural soils. contained or reclaimed. elated to municipal sewage treatment p I from wastewater via domestic sewage | 0 0 lant 94,6 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide by of >= (%) wage treatment plant, no secondary d. prevent/limit release from site to natural soils. contained or reclaimed. elated to municipal sewage treatment p from wastewater via domestic sewage m wastewater after onsite and offsite | 0 0 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide by of >= (%) wage treatment plant, no secondary d. prevent/limit release from site to natural soils. contained or reclaimed. elated to municipal sewage treatment p I from wastewater via domestic sewage om wastewater after onsite and offsite MMs (%) | 0 0 0 lant 94,6 94,6 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide cy of >= (%) wage treatment plant, no secondary d. prevent/limit release from site to natural soils. contained or reclaimed. elated to municipal sewage treatment p I from wastewater via domestic sewage m wastewater after onsite and offsite MMs (%) age (MSafe) based on release following | 0 0 lant 94,6 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide by of >= (%) wage treatment plant, no secondary d. prevent/limit release from site to natural soils. contained or reclaimed. elated to municipal sewage treatment p I from wastewater via domestic sewage m wastewater after onsite and offsite MMs (%) age (MSafe) based on release following moval (kg/d) | 0 0 0 lant 94,6 94,6 3,8E+04 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide by of >= (%) wage treatment plant, no secondary d. prevent/limit release from site to natural soils. contained or reclaimed. elated to municipal sewage treatment p I from wastewater via domestic sewage om wastewater after onsite and offsite MMs (%) age (MSafe) based on release following moval (kg/d) reatment plant flow (m3/d) | 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | |
| a typical removal efficiency of (%) r to receiving water discharge) to provide by of >= (%) wage treatment plant, no secondary d. prevent/limit release from site to natural soils. contained or reclaimed. elated to municipal sewage treatment p I from wastewater via domestic sewage m wastewater after onsite and offsite MMs (%) age (MSafe) based on release following moval (kg/d) | 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | | | |
| | in region: s/year): used locally: year): | | | |

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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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| 30000000776 | |
|------------------|--|
| 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 N MEASURES | MANAGEMENT | |
|--|--|------------|--|
| Section 2.1 | Control of Worker Exposure | | |
| Product Characteristics | | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP | | |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., | | |
| Frequency and Duration of Use | | | |
| Covers daily exposures up to 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 transfersDedicated facilityPROC8b | | 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): | 0,12 | |
|---|------------------|--|
| Fraction of Regional tonnage used locally: | 5,0E-04 | |
| Annual site tonnage (tonnes/year): | 6,2E-05 | |
| Maximum daily site tonnage (kg/day): | 1,7E-04 | |
| 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 pro | | |
| Common practices vary across sites thus conservative process re- | | |
| ease estimates used. | | |
| Technical onsite conditions and measures to reduce or limit discha sions and releases to soil | arges, air emis- | |
| Risk from environmental exposure is driven by freshwater. | | |
| No wastewater treatment required. | | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 | |
| Treat onsite wastewater (prior to receiving water discharge) to provide | 0 | |
| the required removal efficiency of >= (%) | | |
| If discharging to domestic sewage treatment plant, no secondary 0 | | |
| wastewater treatment required. | | |
| Organisational measures to prevent/limit release from site | | |
| Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. | | |
| 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) | 4,4E-02 | |
| 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. | alopoodi | |
| Waste combustion emissions considered in regional exposure assessm | ent. | |
| Conditions and measures related to external recovery of waste | an anata d | |
| 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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| 30000000775 | |
|------------------|---|
| 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 N MEASURES | MANAGEMENT |
|--|---|----------------|
| Section 2.1 | Control of Worker Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP | |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% differently)., | (unless stated |
| Frequency and Duration of Use | | |
| Covers daily exposures up to 8 hours (unless stated differently). | | |
| Other Operational Conditions affecting Exposure | | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | | |

| Contributing Scenarios | Ris | 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. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in region: 0,1 | | 0,1 |
| Regional use tonnage (tonnes/year): 2,5E+03 | | 2,5E+03 |
| Fraction of Regional tonnage used locally: 1 | | 1 |

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| | 2,5E+03 |
|---|------------------|
| Annual site tonnage (tonnes/year): Maximum daily site tonnage (kg/day): | 2,5E+04 |
| Frequency and Duration of Use | 2,3L+04 |
| Continuous release. | |
| Emission Days (days/year): | 100 |
| Environmental factors not influenced by risk management | 100 |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| Other Operational Conditions affecting Environmental Exposure | 100 |
| Release fraction to air from process (initial release prior to RMM): | 5,0E-03 |
| Release fraction to wastewater from process (initial release prior to RMM): | 1,0E-05 |
| Release fraction to soil from process (initial release prior to RMM): | 0 |
| Technical conditions and measures at process level (source) to pro | event release |
| Common practices vary across sites thus conservative process release estimates used. | |
| Technical onsite conditions and measures to reduce or limit discha | arges, air emis- |
| sions and releases to soil | |
| Risk from environmental exposure is driven by freshwater sediment. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 95 |
| Treat onsite wastewater (prior to receiving water discharge) to provide 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) | 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 | |
| waste compustion emissions considered in regional exposure assessm Conditions and measures related to external recovery of waste | |

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

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Section 3.2 - Environment

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

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

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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| 30000000774 | |
|------------------|---|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use in Agrochemicals uses- Professional |
| Use Descriptor | Sector of Use: SU22 Process Categories: PROC 1, PROC 2, PROC 4, PROC 8a, PROC 8b, PROC 11, PROC 13 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.11a.v1 |
| Scope of process | Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal. |

| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES | | |
|---|--|--|--|
| Section 2.1 | Control of Worker Exposure | | |
| Product Characteristics | | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP | | |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., | | |
| Frequency and Duration of | | | |
| Covers daily exposures up to | 8 hours (unless stated differently). | | |
| Other Operational Conditio | ns affecting Exposure | | |
| | Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | | |
| Contributing Scenarios | Risk Management Measures | | |
| Transfer from/pouring from containersPROC8b | No other specific measures identified. | | |
| Mixing in contain- ers.PROC4 | No other specific measures identified. | | |
| Spraying/ fogging by manual applicationPROC11 | Wear a respirator conforming to EN140 with Type A 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 | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 870 |
| | 2,0E-03 |
| Fraction of Regional tonnage used locally: | |
| Annual site tonnage (tonnes/year): | 1,7 |
| Maximum daily site tonnage (kg/day): | 4,8 |
| Frequency and Duration of Use | ı |
| 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 pro | event release |
| Common practices vary across sites thus conservative process re- | |
| lease estimates used. | |
| Technical onsite conditions and measures to reduce or limit discha- | arges, air emis- |
| sions and releases to soil | |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | |
| 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 | l . |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| chage chodia se memoratea, contamoa en reciamoa. | |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Estimated substance removal from wastewater via domestic sewage | 94,6 |
| treatment (%) | 3 .,0 |
| Total efficiency of removal from wastewater after onsite and offsite | 94,6 |
| (domestic treatment plant) RMMs (%) | 04,0 |
| Maximum allowable site tonnage (MSafe) based on release following | 920 |
| total wastewater treatment removal (kg/d) | 320 |
| Assumed domestic sewage treatment plant flow (m3/d) | 8,8E+02 |
| 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 | local and/or regional |
| regulations. | iocai aiiu/oi iegioliai |
| 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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| 30000000773 | |
|------------------|--|
| 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 | f Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | | |
| Other Operational Conditions affecting Exposure | | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | | |

| Contributing Scenarios | Risk Management Measures |
|--|---|
| Bulk transfersUse in contained systemsPROC1PROC2PROC | 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 extraction ventilation at points where emissions occur. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| SprayingMachinePROC1 | Minimise exposure by extracted full enclosure for the operation or equipment. |

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| Consider Manual DDCC44 | Community or a secretary to be safe or a secretary | |
|--|--|--------------------------|
| SprayingManualPROC11 | Carry out in a vented booth or extract | ted enclosure. |
| | , or: Wear a respirator conforming to EN1 | 10 with Type A filter or |
| | better. | 40 With Type A filler of |
| | bottor. | |
| ManualRolling, Brush- No other specific measures identified | | |
| ingPROC10 | | |
| Storage.PROC1PROC2 | Store substance within a closed syste | em. |
| Section 2.2 | Control of Environmental Exposure | |
| Substance is complex UVCB. | Control of Environmental Exposure | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used i | n region: | 0,1 |
| Regional use tonnage (tonnes | | 100 |
| | | 5,0E-04 |
| Fraction of Regional tonnage | | |
| Annual site tonnage (tonnes/y | | 5,0E-02 |
| Maximum daily site tonnage (I | | 0,14 |
| Frequency and Duration of | Use | |
| Continuous release. | | |
| Emission Days (days/year): | | 365 |
| | nfluenced by risk management | 1 |
| Local freshwater dilution factor | | 10 |
| Local marine water dilution fac | | 100 |
| | ns affecting Environmental Exposure | 1 |
| | ocess (initial release prior to RMM): | 0,95 |
| Release fraction to wastewate RMM): | er from process (initial release prior to | 2,5E-02 |
| , | rocess (initial release prior to RMM): | 2,5E-02 |
| | easures at process level (source) to pr | event release |
| Common practices vary acros | s sites thus conservative process re- | |
| lease estimates used. | • | |
| Technical onsite conditions sions and releases to soil | and measures to reduce or limit disch | arges, air emis- |
| Risk from environmental expo | ours is driven by freehwater | |
| | | |
| No wastewater treatment requ | a typical removal efficiency of (%) | |
| | to receiving water discharge) to provide | 0 |
| | | 0 |
| the required removal efficienc | | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | | |
| | prevent/limit release from site | |
| | | |
| Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed. | | |
| Sludge should be incinerated, | contained of reclaimed. | |
| Conditions and Measures re | elated to municipal sewage treatment p | lant |
| Estimated substance removal from wastewater via domestic sewage | | 94,6 |
| treatment (%) | | ,- |
| | m wastewater after onsite and offsite | 94,6 |
| (domestic treatment plant) RM | | ,- |
| | \ / | 1 |

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| Maximum allowable site tonnage (MSafe) based on release following | 35 |
|---|---------|
| 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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| 30000000772 | |
|------------------|--|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use as binders and release agents- Industrial |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 6, PROC 7, PROC 8b, PROC 10, PROC 13, PROC 14 Environmental Release Categories: ERC4, ESVOC SpERC 4.10a.v1 |
| Scope of process | Covers the use as binders and release agents including material transfers, mixing, application (including spraying and brushing), and handling of waste. |

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

| Contributing Scenarios | Risk Management Measures | | |
|--|--|--|--|
| Bulk transfersUse in contained | The same of the same and the sa | | |
| systemsPROC1PROC2PROC | 3 | | |
| Drum/batch transfersPROC8b | No other specific measures identified. | | |
| Mixing operations (closed systems)PROC3 | No other specific measures identified. | | |
| Mixing operations (open systems)PROC4 | No other specific measures identified. | | |
| Mold formingPROC14 | No other specific measures identified. | | |
| Casting operations(open systems)Operation is carried out a elevated temperature (> 20°C above ambient temperature). Aerosol generation due to elevated process temperature-PROC6 | | | |
| SprayingMachinePROC7 | Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. | | |

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| SprayingManualPROC7 | Carry out in a vented booth or extracted enclosure. | |
|--|--|---------------------------|
| | , or: Provide a good standard of controlled ventilation (10 to 15 ai | |
| | changes per hour). | ventilation (10 to 15 all |
| | Avoid carrying out activities involving | evnosure for more than |
| | 4 hours | exposure for more than |
| | Triodio | |
| ManualRolling, Brush- | No other specific measures identified | |
| ingPROC10 | • | |
| Dipping, immersion and pour- | No other specific measures identified | |
| ingPROC13 | | |
| Storage.PROC1PROC2 | Store substance within a closed syste | ∍m. |
| Section 2.2 C | entral of Environmental Expenses | |
| Substance is complex UVCB. | ontrol of Environmental Exposure | |
| | | _ |
| Predominantly hydrophobic. Amounts Used | | |
| | | 0.1 |
| Fraction of EU tonnage used in r | | 0,1 |
| Regional use tonnage (tonnes/ye | | 100 |
| Fraction of Regional tonnage use Annual site tonnage (tonnes/yea | | 100 |
| Maximum daily site tonnage (kg/ | | 5,0E+03 |
| Frequency and Duration of Us | | 5,0⊑+05 |
| Continuous release. | <u>e</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 | | 100 |
| | affecting Environmental Exposure | 100 |
| • | ess (initial release prior to RMM): | 1,0 |
| | rom process (initial release prior to | 3,0E-06 |
| RMM): | Terri presess (miliar release prior te | 0,02 00 |
| | cess (initial release prior to RMM): | 0 |
| | sures at process level (source) to pr | event release |
| | sites thus conservative process re- | |
| lease estimates used. | - | |
| | nd measures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | | |
| Risk from environmental exposu | | |
| Prevent discharge of undissolved substance to or recover from onsite | | |
| wastewater. | | |
| No wastewater treatment require | | |
| Treat air emission to provide a typical removal efficiency of (%) | | 80 |
| | receiving water discharge) to provide | 0 |
| the required removal efficiency of | , , | |
| If discharging to domestic sewag | je treatment plant, no secondary | 0 |
| wastewater treatment required. | rovent/limit release from site | <u> </u> |
| Organisational measures to pr | | |
| Do not apply industrial sludge to | | |
| Sludge should be incinerated, co | nnameu oi ieciaimeu. | |

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| Conditions and Measures related to municipal sewage treatment plant | | |
|---|---------|--|
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 94,6 | |
| Total efficiency of removal from wastewater after onsite and offsite | 94,6 | |
| (domestic treatment plant) RMMs (%) | | |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 1,2E+06 | |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 | |
| Conditions and Measures related to external treatment of waste for disposal | | |

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

Conditions and measures related to external recovery of waste

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

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

indicated.

Section 3.2 -Environment

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

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

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

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

Section 4.2 - Environment

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

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

| 30000000771 | |
|------------------|---|
| 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 o | f Use |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently) | |

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

Contributing Scenarios **Risk Management Measures** General exposures (closed sys-No other specific measures identified. tems)PROC1PROC2PROC3 Bulk transfersPROC8b No other specific measures identified. Filling/ preparation of equipment from No other specific measures identified. drums or containers. Dedicated facilityPROC5PROC8aPROC8bPROC9 Process samplingPROC8b No other specific measures identified. Metal machining operationsPROC17 Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). ManualRolling, BrushingPROC10 No other specific measures identified. SprayingPROC11 Avoid carrying out activities involving exposure for more than 1 hour.

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| | | , or: Wear a respirator conforming A/P2 filter or better. | to EN140 with Type |
|---|---------------|---|--------------------|
| Treatment by dipping and poingPROC13 | ur- | No other specific measures in | dentified. |
| Equipment cleaning and mair nanceNon-dedicated facilityP | | No other specific measures in | dentified. |
| Equipment cleaning and mair Dedicated facilityPROC8b | | No other specific measures in | dentified. |
| Storage.PROC1PROC2 | | Store substance within a clos | sed system. |
| Section 2.2 | Control of | FEnvironmental Exposure | |
| Substance is complex UVCB | | • | |
| Predominantly hydrophobic. | | | |
| Amounts Used | | | |
| Fraction of EU tonnage used | in region: | | 0,1 |
| Regional use tonnage (tonne | | | 50 |
| Fraction of Regional tonnage | | /: | 5,0E-04 |
| Annual site tonnage (tonnes/ | | , - | 2,5E-02 |
| Maximum daily site tonnage | | | 6,8E-02 |
| Frequency and Duration of | | | , |
| Continuous release. | | | |
| Emission Days (days/year): | | | 365 |
| Environmental factors not | nfluenced | by risk management | |
| Local freshwater dilution factor: | | 10 | |
| Local marine water dilution fa | | | 100 |
| Other Operational Conditions affecting Environmental Exposure | | | |
| Release fraction to air from p | | | 0,15 |
| Release fraction to wastewat RMM): | • | · | 5,0E-02 |
| Release fraction to soil from process (initial release prior to RMM): 5,0E-02 | | | |
| | | process level (source) to pro | event release |
| Common practices vary acro | ss sites thus | s conservative process re- | |
| lease estimates used. | | | |
| | | ures to reduce or limit discha | arges, air emis- |
| sions and releases to soil | | on by frachwater | |
| Risk from environmental expo No wastewater treatment req | | en by neshwater. | |
| | | noval efficiency of (%) | |
| 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 | |
| wastewater treatment required. | | | |
| Organisational measures to | | mit release from site | • |
| Do not apply industrial sludge Sludge should be incinerated | to natural s | soils. | |
| Conditions and Measures r | elated to m | unicipal sewage treatment p | lant |
| Estimated substance remova treatment (%) | | | 94,6 |

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| , |
|-------|
| 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 |
| Occident A.A. Illerial | |

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

| 3000000770 | |
|------------------|---|
| 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 | f Use | |
| Covers daily exposures up to | o 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 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 | No other specific measures identified. |
| General exposures (open sys tems)PROC4 | No other specific measures identified. |
| Bulk transfersPROC8b | No other specific measures identified. |
| Filling/ preparation of equipment from drums or containers.PROC5PROC8bPROC9 | ent No other specific measures identified. |
| Process samplingPROC8b | No other specific measures identified. |
| Metal machining operationsPROC17 | No other specific measures identified. |
| Treatment by dipping and pour ingPROC13 | No other specific measures identified. |

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| SprayingPROC7 | | Minimise exposure by partial enc | |
|---|-----------|------------------------------------|-------------------------|
| | | equipment and provide extract ve | entilation at openings. |
| ManualRolling, BrushingPROC10 | | No other specific measures ident | ified. |
| Automated metal roll- | | No other specific measures ident | ified |
| ing/formingUse in contained | SVS- | The care openie measures raon | |
| temsOperation is carried out | | | |
| elevated temperature (> 20°C | ; | | |
| above ambient tempera- | | | |
| ture).PROC2 | | | |
| Semi-automated metal roll- | | Minimise exposure by partial enc | |
| ing/formingOperation is carrie | | equipment and provide extract ve | entilation at openings. |
| at elevated temperature (> 20 |)°C | | |
| above ambient tempera- ture).PROC17 | | | |
| Equipment cleaning and mair | nto- | No other specific measures ident | ifiad |
| nancePROC8aPROC8b | ito | 140 other specific measures ident | illou. |
| Storage.PROC1PROC2 | | Store substance within a closed s | system. |
| | | | ., |
| Section 2.2 | Contr | ol of Environmental Exposure | |
| Substance is complex UVCB | | | |
| Predominantly hydrophobic. | | | |
| Amounts Used | | | |
| Fraction of EU tonnage used | | | 0,1 |
| Regional use tonnage (tonne | | | 100 |
| Fraction of Regional tonnage | | ocally: | 1 |
| Annual site tonnage (tonnes/year): | | | 100 |
| Maximum daily site tonnage (| | : | 5,0E+03 |
| Frequency and Duration of | Use | | |
| Continuous release. | | | 00 |
| Emission Days (days/year): | | | 20 |
| Environmental factors not i | | ced by risk management | 10 |
| Local freshwater dilution factor: | | | 10 |
| Local marine water dilution fa | | cting Environmental Exposure | 100 |
| Other Operational Conditions affecting Environmental Exposure | | 2.0F-02 | |
| Release fraction to air from process (initial release prior to RMM): 2,0E-02 Release fraction to wastewater from process (initial release prior to 3,0E-05) | | 3,0E-05 | |
| RMM): | GI IIOIII | process (iriliar release prior to | 3,02-03 |
| | orocess | (initial release prior to RMM): | 0 |
| Release fraction to soil from process (initial release prior to RMM): 0 Technical conditions and measures at process level (source) to prevent release | | event release | |
| | | thus conservative process re- | |
| lease estimates used. | | · | |
| | and m | neasures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | | | |
| Risk from environmental exposure is o | | driven by freshwater sediment. | |
| Prevent discharge of undissolved substance to or recover from onsite | | | |
| wastewater. No wastewater treatment required. | | | |
| | | l removal efficiency of /0/\ | 70 |
| Treat air emission to provide | | | 70 |
| i reat onsite wastewater (prio | i to rece | eiving water discharge) to provide | 0 |

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| the required removal efficiency of >= (%) | |
|--|-----------------------|
| If discharging to domestic sewage treatment plant, no secondary | 0 |
| wastewater treatment required. | |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| | |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Estimated substance removal from wastewater via domestic sewage | 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. | |

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

indicated.

Section 3.2 - Environment

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

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

Section 4.2 -Environment

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

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

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

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

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or in combination.

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

(http://cefic.org).

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| 30000000769 | |
|------------------|---|
| 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 MA MEASURES | NAGEMENT |
|--|---|---------------|
| 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% (up differently)., | unless stated |
| Frequency and Duration of Use | | |
| Covers daily exposures up to 8 hours (unless stated differently). | | |
| Other Operational Conditions affecting Exposure | | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | | |

| Contributing Scenarios | Risk | Management Measures | |
|---|------|---|--|
| 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 transfersDedicated facili- tyPROC8b | - | 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 | Wear a respirator conforming to EN140 with Type A filter or | | |
|--|---|---|--|
| energy open equipmentOut- doorPROC17 | better. | | |
| Maintenance (of larger plant items) and machine set upPROC8b | No other specific measures iden | tified. | |
| Maintenance (of larger plant items) | Drain down system prior to equip | oment opening or mainte- | |
| and machine set upOperation is | nance. | | |
| carried out at elevated tempera- | | | |
| ture (> 20°C above ambient tem- | | | |
| perature).Dedicated facili- | | | |
| tyPROC8b Maintenance of small itemsOpera- | Drain down system prior to aguir | amont anoning or mainta | |
| tion is carried out at elevated tem- | nance. | Drain down system prior to equipment opening or mainte- | |
| perature (> 20°C above ambient | nance. | | |
| temperature).Non-dedicated facili- | | | |
| tyPROC8a | | | |
| Engine lubricant servicePROC9 | No other specific measures iden | tified. | |
| ManualRolling, BrushingPROC10 | No other specific measures iden | tified. | |
| SprayingPROC11 | Avoid carrying out activities invo | lving exposure for more | |
| Spraying. 110011 | than 1 hour. | g enpeed.e ieie.e | |
| | , or: | | |
| | Wear a respirator conforming to | Wear a respirator conforming to EN140 with Type | |
| | A/P2 filter or better. | | |
| | | | |
| Treatment by dipping and pour-ingPROC13 | No other specific measures iden | tified. | |
| Storage.PROC1PROC2 | Store substance within a closed | system. | |
| Section 2.2 Con | trol of Environmental Exposure | | |
| Substance is complex UVCB. | | | |
| Predominantly hydrophobic. | | | |
| Amounts Used | | | |
| Fraction of EU tonnage used in reg | ion: | 0,1 | |
| Regional use tonnage (tonnes/year | | 50 | |
| Fraction of Regional tonnage used | locally: | 5,0E-04 | |
| Annual site tonnage (tonnes/year): | | 2,5E-02 | |
| Maximum daily site tonnage (kg/da | y): | 6,8E-02 | |
| Frequency and Duration of Use | | | |
| Continuous release. | | | |
| Emission Days (days/year): | | 365 | |
| Environmental factors not influe | nced by risk management | | |
| Local freshwater dilution factor: | | 10 | |
| Local marine water dilution factor: | | 100 | |
| Other Operational Conditions aff | | 10.45 | |
| Release fraction to air from process | s (Initial release prior to RMM): | 0,15 | |
| Release fraction to wastewater from process (initial release prior to RMM): 5,0E-02 | | | |
| Release fraction to soil from proces | ss (initial release prior to RMM): | 5,0E-02 | |
| Technical conditions and measu | | | |
| 1 common comunitoris and incasu | ico at process lever (source) to p | notoni icicase | |

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| Common practices vary across sites thus conservative process re | |
|---|-----------------------|
| Common practices vary across sites thus conservative process release estimates used. | |
| Technical onsite conditions and measures to reduce or limit 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 (%) | |
| 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) | 17 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste for | r disposal |
| External treatment and disposal of waste should comply with applicable regulations. | local and/or regional |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable 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 | |
| Measures/Operational Cond Where other Risk Managem | t expected to exceed the DN(M)EL when the Risk Management ditions outlined in Section 2 are implemented. Hent Measures/Operational Conditions are adopted, then users 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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| 30000000768 | |
|------------------|---|
| 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 STF | • |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 10 differently)., | 00% (unless stated |
| Frequency and Duration of | Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | | |
| Other Operational Conditions affecting Exposure | | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | | |

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

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| Operation and lubrication of high | Ensure operation is undertaken or | |
|---|--|----------------------------|
| energy open equipmentOut- doorPROC17 | Avoid carrying out activities involve than 4 hours | ing exposure for more |
| | , or: | |
| | Wear a respirator conforming to E better. | N140 with Type A filter or |
| Maintenance (of larger plant items) | No other specific measures identi | fied |
| and machine set upPROC8b | 140 other specific measures identifi | iicu. |
| Maintenance (of larger plant items) | Drain down system prior to equipr | ment opening or mainte- |
| and machine set upOperation is | nance. | |
| carried out at elevated tempera- | | |
| ture (> 20°C above ambient temperature). Dedicated facili- | | |
| tyPROC8b | | |
| Maintenance of small itemsOpera- | Provide enhanced general ventila | tion by mechanical |
| tion is carried out at elevated tem- | means. | |
| perature (> 20°C above ambient | Avoid carrying out operation for m | ore than 4 hours. |
| temperature).Non-dedicated facilityPROC8a | | |
| Engine lubricant servicePROC9 | No other specific measures identi | fied. |
| | · | |
| ManualRolling, BrushingPROC10 | No other specific measures identif | fied. |
| SprayingPROC11 | Avoid carrying out activities involv | ring exposure for more |
| | than 1 hour. | 3 - 1 |
| | , or: | |
| | Wear a respirator conforming to E | N140 with Type |
| | A/P2 filter or better. | |
| Treatment by dipping and pour- | No other specific measures identi- | fied. |
| ingPROC13 | | |
| Storage.PROC1PROC2 | Store substance within a closed s | ystem. |
| Section 2.2 Cont | rol 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): | | 50 |
| Fraction of Regional tonnage used lo | ocally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | ١. | 2,5E-02 |
| Maximum daily site tonnage (kg/day |): | 6,8E-02 |
| Frequency and Duration of Use Continuous release. | | |
| Emission Days (days/year): | | 365 |
| | ced by risk management | 303 |
| Environmental factors not influenced by risk management Local freshwater dilution factor: 10 | | 10 |
| Local marine water dilution factor: | | 100 |
| Other Operational Conditions affe | ecting Environmental Exposure | - |
| Release fraction to air from process | | 1,0E-02 |
| • | | |

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| Release fraction to wastewater from process (initial release prior to | 1,0E-02 |
|---|----------------------|
| RMM): | 1.05.00 |
| Release fraction to soil from process (initial release prior to RMM): | 1,0E-02 |
| Technical conditions and measures at process level (source) to pr | event release |
| Common practices vary across sites thus conservative process re- | |
| lease estimates used. | |
| Technical onsite conditions and measures to reduce or limit disch sions and releases to soil | arges, air emis- |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary | 0 |
| wastewater treatment required. | |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 94,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 94,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 18 |
| 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. | S |
| 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 | | |
| 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

| 30000000767 | |
|------------------|--|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Lubricants- Industrial |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 7, PROC 8a, PROC 8b, PROC 9, PROC 10, PROC 13, PROC 17, PROC 18 Environmental Release Categories: ERC4, ERC7, ESVOC SpERC 4.6a.v1 |
| Scope of process | Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes. |

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

| Contributing Scenarios | Ris | k Management Measures | |
|---|-----|--|--|
| General exposures (closed systems)PROC1PROC2PROC | 23 | No other specific measures identified. | |
| General exposures (open systems)PROC4 | | No other specific measures identified. | |
| Bulk transfersPROC8b | | No other specific measures identified. | |
| Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a | | No other specific measures identified. | |
| Filling/ preparation of equipme from drums or containers.Dedicated facilityPROC8b | nt | No other specific measures identified. | |
| Initial factory fill of equip- mentPROC9 | | No other specific measures identified. | |
| Operation and lubrication of high energy open equipmentPROC17PROC18 | | No other specific measures identified. | |

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| ManualRolling, Brush- | No other specific measures identifie | d. |
|---|---|------------------------|
| ingPROC10 | No other energic managers identific | d |
| Treatment by dipping and pour- ingPROC13 | No other specific measures identifie | a. |
| SprayingPROC7 | Minimise exposure by partial enclos | |
| | equipment and provide extract venti | lation at openings. |
| Maintenance (of larger plant | No other specific measures identifie | d. |
| items) and machine set up- | | |
| PROC8b | Drain dawn and flush avatam prior t | a aquinment enening or |
| Maintenance (of larger plant items) and machine set upOp- | Drain down and flush system prior to maintenance. | o equipment opening or |
| eration is carried out at elevated | | |
| temperature (> 20°C above | | |
| ambient temperature).PROC8b | | |
| Maintenance of small | No other specific measures identifie | d. |
| itemsPROC8a | N d d | |
| Remanufacture of reject articlesPROC9 | No other specific measures identifie | |
| Storage.PROC1PROC2 | Store substance within a closed sys | tem. |
| Section 2.2 | Ontrol of Environmental Exposure | |
| Substance is complex UVCB. | • | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in | region: | 0,1 |
| Regional use tonnage (tonnes/) | | 630 |
| Fraction of Regional tonnage us | | 0,16 |
| Annual site tonnage (tonnes/ye | | 100 |
| Maximum daily site tonnage (kg | | 5,0E+03 |
| Frequency and Duration of Us | Se | |
| Continuous release. | | 00 |
| Emission Days (days/year): | luanced by rick management | 20 |
| Environmental factors not inf Local freshwater dilution factor: | idenced by risk management | 10 |
| Local marine water dilution fact | or: | 100 |
| | affecting Environmental Exposure | 100 |
| | cess (initial release prior to RMM): | 5,0E-03 |
| Release fraction to wastewater | from process (initial release prior to | 3,0E-05 |
| RMM): Release fraction to soil from process (initial release prior to RMM): 1,0E-03 | | |
| | asures at process level (source) to pr | |
| | sites thus conservative process re- | |
| lease estimates used. | · | |
| | nd measures to reduce or limit disch | narges, air emis- |
| sions and releases to soil | | |
| | ure is driven by freshwater sediment. | |
| _ | ed substance to or recover from onsite | |
| wastewater. | ad | |
| No wastewater treatment requir | | 70 |
| Treat air emission to provide a t | ypicai removai emolency or (%) | 70 |

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

| 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 | 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. | | |
| Whore other Dick Management Maggures/Operational Conditions are adopted, then users | | |

Where other Risk Management Measures/Operational Conditions are adopted, then users

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

| 30000000766 | |
|------------------|---|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use in Oil and Gas field drilling and production operations- Industrial |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b Environmental Release Categories: ERC4, ESVOC SpERC 4.5a.v1 |
| Scope of process | Oil field well drilling and production operations (including drilling muds and well cleaning) including material transfers, onsite formulation, well head operations, shaker room activities and related maintenance. |

| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES | |
|---|--|--|
| Section 2.1 | Control of Worker Exposure | |
| Product Characteristics | • | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP | |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., | |
| Frequency and Duration of | | |
| | 8 hours (unless stated differently). | |
| Other Operational Conditio | | |
| | an 20°C above ambient temperature (unless stated differently). ard of occupational hygiene is implemented. | |
| Contributing Scenarios | Risk Management Measures | |
| Bulk transfersDedicated facilityPROC8b | No other specific measures identified. | |
| Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC8b | No other specific measures identified. | |
| Drilling mud (re-)formulationPROC3 | No other specific measures identified. | |
| Drill floor operationsPROC4 | No other specific measures identified. | |
| Operation of solids filtering equipment - vapour exposuresPROC4 | No other specific measures identified. | |
| Cleaning of solids filtering equipmentPROC8a | No other specific measures identified. | |
| Treatment and disposal of filtered solidsPROC3 | No other specific measures identified. | |

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| | T | | |
|-----------------------------|---|--|--|
| Process samplingPROC3 | No other specific measures identified. | | |
| | | | |
| General exposures (closed | No other specific measures identified. | | |
| | The other specime measures identified. | | |
| systems)PROC1 | | | |
| Pouring from small contain- | No other specific measures identified. | | |
| ersPROC8a | ' | | |
| | No other and difference identified | | |
| General exposures (open | No other specific measures identified. | | |
| systems)PROC4 | | | |
| Equipment cleaning and | No other specific measures identified. | | |
| maintenancePROC8a | The same of seminary in seminary | | |
| | | | |
| Storage.PROC1PROC2 | Store substance within a closed system. | | |
| | · | | |
| Section 2.2 | Control of Environmental Exposure | | |
| | · | | |
| No exposure assessment pre | 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

Section 4.2 - Environment

No exposure assessment presented for the environment.

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

Qualitative approach used to conclude safe use.

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

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

No exposure assessment presented for the environment.

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

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Exposure Scenario - Worker

| 30000000765 | |
|------------------|---|
| 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 Ris | sk Management Measures | |
|--|--|--|
| Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC8b | No other specific measures identified. | |
| Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a | No other specific measures identified. | |
| Automated process with (semi) closed systems.Use in contained systemsPROC2 | No other specific measures identified. | |
| Automated process with (semi) closed systems.Drum/batch trans fersUse in contained systemsPROC3 | No other specific measures identified. | |
| Semi Automated process. (e.g.: Semi automatic application of floo care and maintenance prod- ucts)PROC4 | No other specific measures identified. | |

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| ManualSurfacesCleaningDipping, immersion and pouringPROC13 | No other specific measures identified. |
|--|--|
| Cleaning with low-pressure washersRolling, Brushingno sprayingPROC10 | No other specific measures identified. |
| Cleaning with high pressure washersSprayingIndoorPROC11 | Limit the substance content in the product to 5 %. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Cleaning with high pressure washersSprayingOutdoorPROC11 | 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): | 14 |
| Fraction of Regional tonnage | used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/) | /ear): | 7,1E-03 |
| Maximum daily site tonnage (| kg/day): | 1,9E-02 |
| 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 | <u></u> |
| Release fraction to air from p | rocess (initial release prior to RMM): | 2,0E-02 |
| Release fraction to wastewate | er from process (initial release prior to | 1,0E-06 |
| RMM): | | |
| | process (initial release prior to RMM): | 0 |
| Technical conditions and measures at process level (source) to prevent release | | |
| | ss sites thus conservative process re- | |
| lease estimates used. | | |
| Technical onsite conditions and measures to reduce or limit discharges, air emis- | | |
| sions and releases to soil | | |
| Risk from environmental expo | • | |
| No wastewater treatment requ | uired. | |

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| 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 | 5,4 | |
| 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 |
|--------------------|---------------------|
| Coation 2.4 Hoolth | |

Section 3.1 - Health

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

Section 3.2 - Environment

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

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

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

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

Section 4.2 - Environment

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

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

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gies, either alone or in combination.

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

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Exposure Scenario - Worker

| 30000000764 | |
|------------------|---|
| 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 transfersUse in contained batch processesPROC3 Application of cleaning products in No other specific measures identified. closed systemsPROC2 Filling/ preparation of equipment No other specific measures identified. from drums or containers.PROC8b Use in contained batch process-No other specific measures identified. esPROC4

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| Degreasing small objects in cleaning stationPROC13 | No other specific measures identifi | ed. |
|---|--|------------------|
| Cleaning with low-pressure washersPROC10 | No other specific measures identified. | |
| Cleaning with high pressure washersPROC7 | Limit the substance content in the product to 1 %. , or: | |
| | Avoid carrying out operation for more than 1 hour., alternatively: Wear a respirator conforming to EN140 with Type A filter or better. | |
| ManualSurfacesCleaningPROC10 | No other specific measures identifi | ed. |
| Storage.PROC1 | Store substance within a closed sy | stem. |
| Section 2.2 Con | trol of Environmental Exposure | |
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in reg | ion: | 0,1 |
| Regional use tonnage (tonnes/year | | 240 |
| Fraction of Regional tonnage used | | 0,41 |
| Annual site tonnage (tonnes/year): | | 100 |
| Maximum daily site tonnage (kg/da | v): | 5,0E+03 |
| Frequency and Duration of Use | <i>.</i> | 1 0,0= 100 |
| Continuous release. | | |
| Emission Days (days/year): | | 20 |
| Environmental factors not influen | nced by risk management | 20 |
| Local freshwater dilution factor: | Took by Hok Management | 10 |
| Local marine water dilution factor: | | 100 |
| Other Operational Conditions aff | ecting Environmental Exposure | 100 |
| | | 1,0 |
| Release fraction to air from process (initial release prior to RMM): Release fraction to wastewater from process (initial release prior to | | 3,0E-06 |
| RMM): | es (initial ralages prior to PMM): | 0 |
| Release fraction to soil from proces | res at process level (source) to pr | • |
| | | event release |
| Common practices vary across site lease estimates used. | s thus conservative process re- | |
| Technical onsite conditions and | measures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | in driven by frankyyotar | 1 |
| 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 (%) | | 70 |
| Treat air emission to provide a typical removal efficiency of (%) | | 70 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | | 0 |
| | | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | | |
| Organisational measures to prev | ent/limit release from site | |
| Do not apply industrial sludge to na | | |
| Do not apply industrial sludge to ha | iturai 30113. | |

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| 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 | 1,2E+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 | | |

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 | een 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)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.

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

| 30000000763 | 0000000763 | |
|------------------|--|--|
| 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 Sub- | Covers use of substance/product up to 100% (unless stated |
| stance in Mixture/Article | differently)., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| A | |

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

| | 70 1 | |
|--|--|--|
| Contributing Scenarios Ris | sk Management Measures | |
| General exposures (closed systems)PROC1 | No other specific measures identified. | |
| Filling/ preparation of equipment from drums or containers. Use in contained systems PROC2 | No other specific measures identified. | |
| General exposures (closed systems)Use in contained systemsPROC2 | No other specific measures identified. | |
| Preparation of material for applicationUse in contained batch processesPROC3 | No other specific measures identified. | |
| Film formation - air dryingPROC4 | No other specific measures identified. | |
| Preparation of material for applicationPROC5 | No other specific measures identified. | |

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| Material transfersDrum/batch transfersNon-dedicated facilityPROC8aPROC8b | No other specific measures identified. |
|--|---|
| Roller, spreader, flow applicationPROC10 | No other specific measures identified. |
| ManualSprayingIndoorPROC11 | Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Limit the substance content in the mixture to 50 %. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| ManualSprayingOutdoorPROC11 | Ensure operation is undertaken outdoors. Limit the substance content in the mixture to 50 %. Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Dipping, immersion and pour-ingPROC13 | 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 | 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): | | 110 |
| Fraction of Regional tonnage | used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/y | vear): | 5,4E-02 |
| Maximum daily site tonnage (| kg/day): | 0,15 |
| 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 | ocess (initial release prior to RMM): | 0,98 |
| Release fraction to wastewate RMM): | er from process (initial release prior to | 1,0E-02 |

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| Release fraction to soil from process (initial release prior to RMM): | 1,0E-02 | |
|---|---|--|
| Technical conditions and measures at process level (source) to pr | event release | |
| Common practices vary across sites thus conservative process re- | | |
| lease estimates used. | | |
| Technical onsite conditions and measures to reduce or limit disch | arges, air emis- | |
| sions and releases to soil | _ | |
| Risk from environmental exposure is driven by freshwater. | | |
| No wastewater treatment required. | | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 | |
| Treat onsite wastewater (prior to receiving water discharge) to provide 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 | <u> </u> | |
| 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) | 4,0E+01 | |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 | |
| Conditions and Measures related to external treatment of waste fo | r disposal | |
| External treatment and disposal of waste should comply with applicable regulations. | e local and/or regiona | |
| | | |
| Conditions and measures related to external recovery of waste | External recovery and recycling of waste should comply with applicable local and/or regiona | |
| * | local and/or regiona | |

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

Section 3.2 - Environment

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

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

| 30000000762 | |
|------------------|--|
| 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 | Use | |
| | 8 hours (unless stated differently). | |
| Other Operational Condition | ons affecting Exposure | |
| Assumes use at not more that | an 20°C above ambient temperature (unless stated differently). | |
| Assumes a good basic standard of occupational hygiene is implemented. | | |
| Contributing Scenarios | Risk Management Measures | |
| General exposures (closed systems)PROC1 | No other specific measures identified. | |
| General exposures (closed systems) with sample collectionUse in contained systemsPROC2 | No other specific measures identified. | |
| Film formation - force dry- ing, stoving and other tech- nologies.(closed sys- tems)Operation is carried out at elevated temperature (> 20°C above ambient temperature).PROC2 | No other specific measures identified. | |
| Mixing operations (closed systems)Use in contained | No other specific measures identified. | |

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| hotal process DDOC2 | T | |
|---|---|-----------------------|
| batch processesPROC3 | Al d | |
| Film formation - air dry- ingPROC4 | No other specific measures identified. | |
| Preparation of material for | No other specific measures identified. | |
| applicationMixing opera- | | |
| tions (open sys- | | |
| tems)PROC5 | | |
| Spraying (automat- ic/robotic)PROC7 | Carry out in a vented booth provided with | n laminar airflow. |
| ManualSprayingPROC7 | Carry out in a vented booth provided with | n laminar airflow |
| Wandalopraying: 1007 | , or: | riammar annow. |
| | Wear a respirator conforming to EN140 v better. | with 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 | No other specific measures identified. | |
| pouringPROC13 Laboratory activi- | No other specific measures identified. | |
| tiesPROC15 | · | |
| Material trans- | No other specific measures identified. | |
| fersDrum/batch transfer- | | |
| sTransfer from/pouring from | | |
| containersPROC9 | | |
| Production or preparation | Store substance within a closed system. | |
| or articles by tabletting, | | |
| compression, extrusion or | | |
| pelletisationPROC14 | | |
| Equipment cleaning and maintenancePROC8a | No other specific measures identified. | |
| Storage.PROC1 | Store substance within a closed system. | |
| Section 2.2 | Control of Environmental Exposure | |
| Substance is complex UVCB | • | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used | in region: | 0,1 |
| Regional use tonnage (tonne | | 370 |
| Fraction of Regional tonnage | | 1 |
| Annual site tonnage (tonnes/ | • | 370 |
| Maximum daily site tonnage | | 1,9E+04 |
| Frequency and Duration of Use | | |
| Continuous release. | | |
| Emission Days (days/year): 20 | | |
| Environmental factors not influenced by risk management | | |
| Local freshwater dilution factor | | 10 |
| | | 100 |
| Total mainter water anatom ration | | |

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| Release fraction to wastewater from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release prior to RMM): Release fraction to soil from process (initial release from telease prior to prevent release prior to prevent decays and prevent decays are decays and measures to prevent decays are missions and release to soil and release from site wastewater treatment required. 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 Prevent release proment plant, no secondary wastewater treatment required. Release fraction to soil from wastewater via domestic sewage place prevent plant place process release prometal plant place process release prometal plant plan | Release fraction to air from process (initial release prior to RMM): | 9,8E-01 |
|--|---|----------------------|
| RMM): Release fraction to soil from process (initial release prior to RMM): Gechnical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process re- ease estimates used. Gechnical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite wastewater. If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Freat air emission to provide a typical removal efficiency of (%) Freat 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. Drganisational 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 estatment (%) Fotal efficiency of removal from wastewater via domestic sewage reatment (%) Fotal efficiency of removal from wastewater after onsite and offsite domestic treatment plant), RMMs (%) Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal engulations. Conditions and measures related to external treatment of waste for disposal engulations. | | · ' |
| Release fraction to soil from process (initial release prior to RMM): Fechnical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process re- ease estimates used. Fechnical onsite conditions and measures to reduce or limit discharges, 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. Freat air emission to provide a typical removal efficiency of (%) If reat onsite wastewater (prior to receiving water discharge) to provide he 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. Situdge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant estimated substance removal from wastewater via domestic sewage reatment (%) Fotal efficiency of removal from wastewater after onsite and offsite domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Zonditions and Measures related to external treatment of waste for disposal External treatment and disposal of waste should comply with applicable local and/or region regulations. | . , , | ', ' = ' ' |
| Technical conditions and measures at process level (source) to prevent release Common practices vary across sites thus conservative process re- ease estimates used. Technical onsite conditions and measures to reduce or limit discharges, air emis- sions and releases to soil Risk from environmental exposure is driven by freshwater 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 (%) Treat onsite wastewater (prior to receiving water discharge) to provide he required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Drganisational 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 Gonditions and Measures related to municipal sewage treatment plant Stimated substance removal from wastewater after onsite and offsite domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal External treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | / | 0 |
| Common practices vary across sites thus conservative process rease estimates used. Fechnical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil Risk from environmental exposure is driven by freshwater sediment. Prevent discharge of undissolved substance to or recover from onsite wastewater. If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Freat air emission to provide a typical removal efficiency of (%) If discharging to domestic sewage treatment plant, no secondary of discharging to domestic sewage treatment plant, no secondary of discharging to domestic sewage treatment plant, no secondary of discharging to domestic sewage treatment plant, no secondary of discharging to domestic sewage treatment plant, no secondary of discharging to domestic sewage treatment plant, no secondary of discharging to domestic sewage treatment plant, no secondary of discharging to domestic sewage treatment plant of domestic sewage to not apply industrial sludge to natural soils. Soludge should be incinerated, contained or reclaimed. Conditions and Measures related to municipal sewage treatment plant estimated substance removal from wastewater via domestic sewage of settlement (%) Fotal efficiency of removal from wastewater after onsite and offsite of domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following of the domestic sewage treatment plant flow (m3/d) 2,0E+03 Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | | event release |
| Prevent discharge of undissolved substance to or recover from onsite vastewater. If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. If eischarging to bomestic sewage treatment plant, no secondary wastewater treatment required. If eischarging to domestic sewage treatment plant, no secondary wastewater treatment required. If ear 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. Dragnisational 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 reatment (%) Fotal efficiency of removal from wastewater after onsite and offsite domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following of the domestic sewage treatment plant flow (m3/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | | |
| 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. Freat air emission to provide a typical removal efficiency of (%) Freat 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. Dragnisational 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 reatment (%) Fotal efficiency of removal from wastewater after onsite and offsite domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following of the conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | lease estimates used. | |
| 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. Freat air emission to provide a typical removal efficiency of (%) Freat onsite wastewater (prior to receiving water discharge) to provide he required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary of discharging to domestic sewage treatment plant, no secondary of wastewater treatment required. Draganisational 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 reatment (%) Fotal efficiency of removal from wastewater after onsite and offsite domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following of the domestic sewage treatment plant flow (m3/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | Technical onsite conditions and measures to reduce or limit disch | arges, air emis- |
| Prevent discharge of undissolved substance to or recover from onsite wastewater. f discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Freat air emission to provide a typical removal efficiency of (%) Freat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) f discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Drganisational 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 reatment (%) Fotal efficiency of removal from wastewater after onsite and offsite domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following of the domestic sewage treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | sions and releases to soil | |
| Prevent discharge of undissolved substance to or recover from onsite wastewater. f discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Freat air emission to provide a typical removal efficiency of (%) Freat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) f discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Drganisational 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 reatment (%) Fotal efficiency of removal from wastewater after onsite and offsite domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following of the domestic sewage treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | Risk from environmental exposure is driven by freshwater sediment. | |
| f discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Freat air emission to provide a typical removal efficiency of (%) Freat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) f discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Forganisational measures to prevent/limit release from site For on tapply industrial sludge to natural soils. Foliudge should be incinerated, contained or reclaimed. Fonditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage reatment (%) Fotal efficiency of removal from wastewater after onsite and offsite domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | Prevent discharge of undissolved substance to or recover from onsite | |
| Wastewater treatment required. Freat air emission to provide a typical removal efficiency of (%) Freat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) f discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Drganisational 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 reatment (%) Fotal efficiency of removal from wastewater after onsite and offsite domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | wastewater. | |
| 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. Drganisational 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 streatment (%) 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 external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | If discharging to domestic sewage treatment plant, no secondary | |
| 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. Drganisational 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 reatment (%) Total efficiency of removal from wastewater after onsite and offsite domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following on the standard wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | wastewater treatment required. | |
| the required removal efficiency of >= (%) If discharging to domestic sewage treatment plant, no secondary Wastewater treatment required. Drganisational 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 reatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal External treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | Treat air emission to provide a typical removal efficiency of (%) | |
| f discharging to domestic sewage treatment plant, no secondary wastewater treatment required. Drganisational 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 reatment (%) Total efficiency of removal from wastewater after onsite and offsite domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal External treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | Treat onsite wastewater (prior to receiving water discharge) to provide | 89,1 |
| Progranisational 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 (streatment (%)) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following (otal 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 region regulations. Conditions and measures related to external recovery of waste | the required 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 plant Estimated substance removal from wastewater via domestic sewage reatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | If discharging to domestic sewage treatment plant, no secondary | 0 |
| Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage reatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal External treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | wastewater treatment required. | |
| Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage reatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal External treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | | |
| Conditions and Measures related to municipal sewage treatment plant Estimated substance removal from wastewater via domestic sewage (streatment (%)) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following (otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | | |
| Estimated substance removal from wastewater via domestic sewage reatment (%) Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal External treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | Sludge should be incinerated, contained or reclaimed. | |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) Maximum allowable site tonnage (MSafe) based on release following (otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | Conditions and Measures related 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 (otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | Estimated substance removal from wastewater via domestic sewage | 94,6 |
| Assumed domestic sewage treatment plant (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | treatment (%) | |
| Maximum allowable site tonnage (MSafe) based on release following otal wastewater treatment removal (kg/d) Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | | 94,6 |
| Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal external treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | (domestic treatment plant) RMMs (%) | |
| Assumed domestic sewage treatment plant flow (m3/d) Conditions and Measures related to external treatment of waste for disposal External treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | 5 \ , | 3,8E+04 |
| Conditions and Measures related to external treatment of waste for disposal External treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | | |
| External treatment and disposal of waste should comply with applicable local and/or region regulations. Conditions and measures related to external recovery of waste | | |
| regulations. Conditions and measures related to external recovery of waste | | |
| Conditions and measures related to external recovery of waste | | local and/or region |
| | regulations. | |
| | Conditions and measures related to external recovery of waste | |
| | | local and/or region: |
| egulations. | egulations. | _ |

| 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.

According to EC No 1907/2006 as amended as at the date of this SDS

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

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

| 30000000761 | |
|------------------|--|
| 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 MANAGEMEASURES | GEMENT |
|--|---|-----------|
| 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% (unle differently)., | ss stated |
| Frequency and Duration of Use | | |
| Covers daily exposures up to 8 hours (unless stated differently). | | |
| Other Operational Conditions affecting Exposure | | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). | | |

Assumes a good basic standard of occupational hygiene is implemented.

Contributing Scenarios Risk Management Measures General exposures (closed No other specific measures identified. systems)PROC1PROC2PROC3 General exposures (open sys-No other specific measures identified. tems)PROC4 Batch processes at elevated Formulate in enclosed or ventilated mixing vessels. temperaturesOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC3 No other specific measures identified. Process samplingPROC3 Laboratory activitiesPROC15 No other specific measures identified. Bulk transfersPROC8b No other specific measures identified. Mixing operations (open sys-No other specific measures identified.

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| tems)PROC5 | | |
|---|--|------------------|
| ManualTransfer from/pouring | No other specific measures identified | <u> </u> |
| from containersNon-dedicated | | ۸. |
| facilityPROC8a | | |
| Drum/batch transfersDedicated facilityPROC8b | No other specific measures identified | d. |
| 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 | No other exections are identified | 1 |
| Equipment cleaning and maintenancePROC8a | No other specific measures identified | 1. |
| Storage.PROC1PROC2 | Store substance within a closed syst | |
| Storage: 11001111002 | Store substance within a closed syst | GIII. |
| Section 2.2 | Control of Environmental Exposure | |
| Substance is complex UVCB. | • | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in | n region: | 0,1 |
| Regional use tonnage (tonnes | /year): | 70 |
| Fraction of Regional tonnage u | used locally: | 1 |
| Annual site tonnage (tonnes/ye | ear): | 70 |
| Maximum daily site tonnage (k | g/day): | 7,0E+03 |
| Frequency and Duration of U | Jse | |
| Continuous release. | | |
| Emission Days (days/year): | | 10 |
| Environmental factors not in | fluenced by risk management | |
| Local freshwater dilution factor | • | 10 |
| Local marine water dilution fac | etor: | 100 |
| | s affecting Environmental Exposure | |
| | ocess (initial release prior to RMM): | 1,0E-02 |
| | r from process (initial release prior to | 2,0E-04 |
| RMM): | ocess (initial release prior to RMM): | 1,0E-04 |
| | easures at process level (source) to pro | |
| | s sites thus conservative process re- | evenit release |
| lease estimates used. | s sites thus conservative process re- | |
| | and measures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | | |
| | sure 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 (%) | | 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 | prevent/limit release from site | |
| Organisational ineasures to | preventimini release moin site | |

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Do not apply industrial sludge to natural soils.

Sludge should be incinerated, contained or reclaimed.

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

Conditions and Measures related to external treatment of waste for disposal

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

Conditions and measures related to external recovery of waste

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

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

Section 3.1 - Health

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

Section 3.2 - Environment

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

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

Section 4.1 - Health

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

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

Section 4.2 -Environment

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

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

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

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Exposure Scenario - Worker

| 30000000759 | |
|------------------|---|
| 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. | | |

| Cantributing Cooperies | Diek Managament Massures |
|-----------------------------|--|
| Contributing Scenarios | Risk Management Measures |
| General exposures (closed | No other specific measures identified. |
| systems)PROC1PROC2PRO | |
| 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. |
| Bulk transfers(open sys- | No other specific measures identified. |
| tems)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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| Cultatanas is samulau IIVOD | T |
|---|------------------|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Amounts Used | T |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 9,5E+03 |
| Fraction of Regional tonnage used locally: | 1 |
| Annual site tonnage (tonnes/year): | 9,5E+03 |
| Maximum daily site tonnage (kg/day): | 9,5E+04 |
| Frequency and Duration of Use | |
| Continuous release. | |
| Emission Days (days/year): | 100 |
| Environmental factors not influenced by risk management | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| Other Operational Conditions affecting Environmental Exposure | |
| Release fraction to air from process (initial release prior to RMM): | 1,0E-02 |
| Release fraction to wastewater from process (initial release prior to RMM): | 3,0E-04 |
| Release fraction to soil from process (initial release prior to RMM): | 1,0E-04 |
| Technical conditions and measures at process level (source) to pro | |
| Common practices vary across sites thus conservative process re- | |
| lease estimates used. | |
| Technical onsite conditions and measures to reduce or limit discharge | arges, air emis- |
| sions and releases to soil | g = 0, |
| 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 | 74,9 |
| the required removal efficiency of >= (%) | , - |
| If discharging to domestic sewage treatment plant, no secondary | 0 |
| wastewater treatment required. | |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| Prevent discharge of undissolved substance to or recover from onsite w | astewater. |
| 3 | |
| 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 | 4,4E+05 |
| total wastewater treatment removal (kg/d) | , := : • • |
| Assumed domestic sewage treatment plant flow (m3/d) | 1,0E+04 |
| Conditions and Measures related to external treatment of waste for | |
| During manufacturing no waste of the substance is generated. | |
| | |
| Conditions and measures related to external recovery of waste | |

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During manufacturing no waste of the substance is generated.

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Worker

| 30000000760 | |
|------------------|--|
| 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, ERC 6D, 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 MA MEASURES | ANAGEMENT |
|--|--|----------------|
| Section 2.1 | Control of Worker Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP | |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (differently)., | (unless stated |
| Frequency and Duration of Use | | |
| Covers daily exposures up to 8 hours (unless stated differently). | | |
| Other Operational Conditions affecting Exposure | | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | | |

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

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| Section 2.2 | Control of Environmental Exposure | |
|---|--|------------------------|
| Substance is complex UVCB | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in region: | | 0,1 |
| Regional use tonnage (tonnes/year): | | 150 |
| Fraction of Regional tonnage used locally: | | 6,8E-03 |
| Annual site tonnage (tonnes/ | | 1,0 |
| Maximum daily site tonnage (| | 50 |
| Frequency and Duration of | | 100 |
| Continuous release. | 030 | |
| Emission Days (days/year): | | 20 |
| | nfluenced by risk management | 20 |
| Local freshwater dilution factor | | 10 |
| Local marine water dilution fa | | 100 |
| | ns affecting Environmental Exposure | 100 |
| | rocess (initial release prior to RMM): | 1,0E-04 |
| | er from process (initial release prior to | 1,0E-05 |
| RMM): | er from process (initial release prior to | 1,02-03 |
| , | process (initial release prior to RMM): | 1,0E-05 |
| | neasures at process level (source) to pr | |
| | ss sites thus conservative process re- | |
| lease estimates used. | 33 Sites thus conservative process re- | |
| | s and measures to reduce or limit disch | arges air emis- |
| sions and releases to soil | dia incasares to reduce or mine discin | larges, an enns- |
| Risk from environmental expo | osure is driven by freshwater | |
| No wastewater treatment req | | |
| | a typical removal efficiency of (%) | 90 |
| | r to receiving water discharge) to provide | 0 |
| the required removal efficience | | |
| | wage treatment plant, no secondary | 0 |
| wastewater treatment require | | |
| | prevent/limit release from site | |
| Do not apply industrial sludge | | |
| Sludge should be incinerated | | |
| g | , | |
| Conditions and Measures r | elated to municipal sewage treatment p | olant |
| | I from wastewater via domestic sewage | 94,6 |
| treatment (%) | 3 | , - |
| | om wastewater after onsite and offsite | 94,6 |
| (domestic treatment plant) RI | | , |
| | age (MSafe) based on release following | 1,4E+04 |
| total wastewater treatment re | | , |
| Assumed domestic sewage to | | 2,0E+03 |
| | elated to external treatment of waste fo | |
| | | |
| Conditions and Measures re | sal of waste should comply with applicable | e local and/or regiona |
| Conditions and Measures re External treatment and dispos | sal of waste should comply with applicable | e local and/or regiona |
| Conditions and Measures re | sal of waste should comply with applicable | e local and/or regions |

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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

| 30000000781 | |
|------------------|---|
| 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 | SK MANAGEMENT |
|--|---|--------------------|
| | MEASURES | |
| Section 2.1 | Control of Worker Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STF | • |
| Concentration of the Sub- | Covers use of substance/product up to 1 | 00% (unless stated |
| stance in Mixture/Article | differently)., | |
| Frequency and Duration of | | |
| | 8 hours (unless stated differently). | |
| Other Operational Condition | | |
| | an 20°C above ambient temperature (unles | |
| Assumes a good basic stand | ard of occupational hygiene is implemente | d. |
| Contributing Scenarios | Risk Management Measures | |
| Bulk transfersUse in con- | No other specific measures identified. | |
| tained systemsPROC2 | | |
| 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 |
| | | 340 |

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| | 100500 |
|---|-----------------------|
| Fraction of Regional tonnage used locally: | 8,8E-02 |
| Annual site tonnage (tonnes/year): | 3,0E-01 |
| Maximum daily site tonnage (kg/day): | 1,0E+02 |
| Frequency and Duration of Use | 1 |
| Continuous release. | |
| Emission Days (days/year): | 300 |
| Environmental factors not influenced by risk management | 1 |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| Other Operational Conditions affecting Environmental Exposure | |
| 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 pr | event release |
| Common practices vary across sites thus conservative process re- | |
| lease estimates used. | |
| Technical onsite conditions and measures to reduce or limit disch | arges, air emis- |
| sions and releases to soil | |
| Risk from environmental exposure is driven by freshwater sediment. | |
| 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, no secondary | 71,9 |
| wastewater treatment required. | |
| Organisational measures to prevent/limit release from site | |
| Do not apply industrial sludge to natural soils. | |
| Sludge should be incinerated, contained or reclaimed. | |
| | |
| Conditions and Measures related to municipal sewage treatment p | lant |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 94,6 |
| Total efficiency of removal from wastewater after onsite and offsite | 98,5 |
| (domestic treatment plant) RMMs (%) | |
| Maximum allowable site tonnage (MSafe) based on release following | 1,0E+02 |
| total wastewater treatment removal (kg/d) | |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| Conditions and Measures related to external treatment of waste fo | r disposal |
| External treatment and disposal of waste should comply with applicable local and/or regional regulations. | |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable regulations. | local and/or regional |

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

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indicated.

Section 3.2 - Environment

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

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

Section 4.1 - Health

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

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

Section 4.2 -Environment

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

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

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

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Exposure Scenario - Worker

| 30000000782 | 00782 | |
|------------------|---|--|
| 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 MEASURES | K MANAGEMENT | | |
|--|---|--------------------|--|--|
| Section 2.1 | Control of Worker Exposure | | | |
| Product Characteristics | | | | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STF |) | | |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 10 differently)., | 00% (unless stated | | |
| Frequency and Duration of Use | | | | |
| | Covers daily exposures up to 8 hours (unless stated differently). | | | |
| Other Operational Conditions affecting Exposure | | | | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | | | | |
| Contributing Scenarios | Risk Management Measures | | | |
| 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 | s/year): | 130 | | |
| Fraction of Regional tonnage | used locally: | 1,1E-02 | | |
| Annual site tonnage (tonnes/ | year): | 1,5 | | |

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| Maximum daily site tonnage (kg/day): | 4,0 | |
|---|------------------|--|
| Frequency and Duration of Use | | |
| Continuous release. | | |
| Emission Days (days/year): | 365 | |
| Environmental factors not influenced by risk management | | |
| Local freshwater dilution factor: | 10 | |
| Local marine water dilution factor: | 100 | |
| Other Operational Conditions affecting Environmental Exposure | | |
| Release fraction to air from process (initial release prior to RMM): | 1,0E-02 | |
| Release fraction to wastewater from process (initial release prior to RMM): | 0,99 | |
| Release fraction to soil from process (initial release prior to RMM): | 0 | |
| Technical conditions and measures at process level (source) to pr | event release | |
| Common practices vary across sites thus conservative process re- | | |
| lease estimates used. | | |
| Technical onsite conditions and measures to reduce or limit disch | arges, air emis- | |
| sions and releases to soil | | |
| Risk from environmental exposure is driven by soil. | | |
| If discharging to domestic sewage treatment plant, no secondary | | |
| wastewater treatment required. | | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 | |
| Treat onsite wastewater (prior to receiving water discharge) to provide | 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 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) | 26 | |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 | |
| Conditions and Measures related to external treatment of waste fo | | |
| External treatment and disposal of waste should comply with applicable 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. | | | |

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Section 3.2 - Environment

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

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

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Consumer

| 30000001116 | |
|------------------|---|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Functional Fluids - Consumer |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC16, PC17 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.13c.v1 |
| Scope of process | Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants. |

| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES | |
|---|---|-------|
| Section 2.1 | Control of Consumer Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure > 10 Pa | |
| 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): | | 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 | |

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

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

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

| Section 2.2 Control of Environmental Exposure | | |
|---|--|---------|
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used | in region: | 0,1 |
| Regional use tonnage (tonne | s/year): | 3,0 |
| Fraction of Regional tonnage | | 5,0E-04 |
| Annual site tonnage (tonnes/ | /ear): | 1,5E-03 |
| Maximum daily site tonnage (| kg/day): | 4,1E-03 |
| Frequency and Duration of | Use | |
| Continuous release. | | |
| Emission Days (days/year): | | 365 |
| Environmental factors not i | nfluenced by risk management | |
| Local freshwater dilution factor | or: | 10 |
| Local marine water dilution factor: | | 100 |
| Other Operational Conditio | ns affecting Environmental Exposure | |
| | rocess (initial release prior to RMM): | 5,0E-02 |
| Release fraction to wastewater from process (initial release prior to | | 2,5E-02 |
| RMM): | | |
| | 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 | | 1,1 |
| total wastewater treatment removal (kg/d) | | |
| Assumed domestic sewage treatment plant flow (m3/d) | | 2,0E+03 |
| | elated to external treatment of waste fo | • |

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

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable 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.

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

| Exposure occitatio oc | 7110411101 |
|-----------------------|---|
| 30000001115 | |
| 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 RISK MANAGEMENT MEASURES | | | |
|---|---|--------|--|--|
| Section 2.1 | Control of Consumer Exposure | | | |
| Product Characteristics | | | | |
| Physical form of product | Liquid, vapour pressure > 10 Pa | | | |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. | | | |
| | Covers concentration up to (%): 100 % | | | |
| Amounts Used | Amounts Used | | | |
| Unless stated otherwise. | Unless stated otherwise. | | | |
| for each use event, covers amount up to (g): | | 37.500 | | |
| covers skin contact area (cm2): | | 420 | | |
| Frequency and Duration of Use | | | | |
| Unless stated otherwise.Cov | Unless stated otherwise.Covers use up to (days/year): | | | |
| Covers use up to (days/year): | | 365 | | |
| covers use up to (times/day of use): | | 1 | | |
| Exposure (hours/event): | | 2 | | |
| Other Operational Conditions affecting Exposure | | | | |

Unless stated otherwise.

Covers use at ambient temperatures.

Covers use in room size of 20m3

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

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

| Section 2.2 Control of Environmental Exposure | | |
|--|--|---------|
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used in region: 0,1 | | 0,1 |
| Regional use tonnage (tonnes/year): 2,4E+03 | | 2,4E+03 |
| Fraction of Regional tonnage used locally: 5,0E-04 | | 5,0E-04 |

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| Annual site tonnage (tonnes/year): | 1,2 | |
|---|------------|--|
| Maximum daily site tonnage (kg/day): 3,2 | | |
| 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 | olant | |
| 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 | 8,4E+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 assessment. | | |
| | | |
| Conditions and measures related to external recovery of waste | | |
| This substance is consumed during use and no waste of substance is generated. | | |

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

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

Section 3.2 - Environment

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

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

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

Section 4.2 -Environment

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

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measures.

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

| 30000001114 | |
|------------------|---|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use in Agrochemicals uses - Consumer |
| Use Descriptor | Sector of Use: SU21 Product Categories: , PC27 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.11b.v1 |
| Scope of process | Covers the consumer use in agrochemicals in liquid and solid forms. |

| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES | |
|---|---|---------------------------------------|
| Section 2.1 | Control of Consumer Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure > 10 Pa | |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. | |
| | Covers concentration up to (%): 50 % | |
| Amounts Used | | |
| Unless stated otherwise. | | |
| covers skin contact area (cm2): | | 857,5 |
| Frequency and Duration of | f Use | |
| Unless stated otherwise. | | |
| Covers use up to (days/year): | | 365 |
| covers use up to (times/day of use): | | 1 |
| Exposure (hours/event): 4 | | 4 |
| 041 0 | · · - | · · · · · · · · · · · · · · · · · · · |

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 | |
| | Covers exposure up to 4 hours/event | |
| | 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 | |

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| 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 | |

| Section 2.2 Control of Environmental Exposure | | |
|---|--|---------|
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used | in region: | 0,1 |
| Regional use tonnage (tonne | | 10 |
| Fraction of Regional tonnage | | 2,0E-03 |
| Annual site tonnage (tonnes/ | | 2,0E-02 |
| Maximum daily site tonnage (| | 5,5E-02 |
| Frequency and Duration of | Use | |
| Continuous release. | | |
| Emission Days (days/year): | | 365 |
| | nfluenced by risk management | 1 |
| Local freshwater dilution factor: | | 10 |
| Local marine water dilution fa | | 100 |
| | ns affecting Environmental Exposure | |
| | rocess (initial release prior to RMM): | 0,9 |
| Release fraction to wastewate RMM): | 1,0E-02 | |
| Release fraction to soil from process (initial release prior to RMM): | | 9,0E-02 |
| | elated to municipal sewage treatment p | plant |
| Risk from environmental expo | | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | | 94,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | | 1,4E+01 |
| 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.

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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 - Consumer

| 30000001113 | |
|------------------|---|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Lubricants - Consumer High Environmental Release |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC1, PC24, PC31 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.6e.v1 |
| Scope of process | Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil. |

| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES | |
|---|---|-------|
| Section 2.1 | Control of Consumer Exposure | |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure > 10 Pa | |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. | |
| | Covers concentration up to (%): 100 % | |
| Amounts Used | | |
| Unless stated otherwise. | | |
| for each use event, covers amount up to (g): | | 6.390 |
| covers skin contact area (cm2): | | 468 |
| Frequency and Duration of | Use | |
| Unless stated otherwise. | | |
| Covers use up to (days/year): | | 365 |
| covers use up to (times/day of use): | | 1 |
| Exposure (hours/event): 8 | | 8 |
| Other Operational Conditions affecting Exposure | | |
| I I allowed a Control of Charles 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 | Covere concernment up to 50 % |
| glue, wood parquet glue). | |
| gido, wood parquot gido). | 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 |
| | |
| Adhesives, sealants Glue | Covers exposure up to 6,00 hours/event Covers concentrations up to 30 % |
| from spray. | Covers concentrations up to 30 % |
| nom spray. | covers use up to 6 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 35,73 cm2 |
| | For each use event, covers amount up to 85,05 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 4,00 hours/event |
| Adhesives, sealants Seal- | Covers concentrations up to 30 % |
| ants. | Covers concentrations up to 50 % |
| 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 |
| Lubricante anagana na | 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 |
| | |
| Lubricants, greases, re- lease products Pastes. | Covers use in room size of 34 m3 |
| Lubricants, greases, release products Pastes. | Covers use in room size of 34 m3 Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % |
| | Covers use in room size of 34 m3 Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year |
| | Covers use in room size of 34 m3 Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year Covers use up to 1 times/day of use |
| | Covers use in room size of 34 m3 Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 |
| | Covers use in room size of 34 m3 Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 34 g |
| lease products Pastes. | Covers use in room size of 34 m3 Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 34 g Covers exposure up to 4 hours/event |
| lease products Pastes. Lubricants, greases, re- | Covers use in room size of 34 m3 Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 34 g |
| lease products Pastes. | Covers use in room size of 34 m3 Covers exposure up to 0,17 hours/event Covers concentrations up to 20 % covers use up to 10 day/year Covers use up to 1 times/day of use covers skin contact area up to (cm2): 468,00 cm2 For each use event, covers amount up to 34 g Covers exposure up to 4 hours/event |

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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 | Covers concentrations up to 50 % |
| Polishes, wax / cream | · |
| (floor, furniture, shoes). | |
| | covers use up to 29 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 430,00 cm2 |
| | For each use event, covers amount up to 142 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 1,23 hours/event |
| Polishes and wax blends | Covers concentrations up to 50 % |
| Polishes, spray (furniture, | · |
| shoes). | |
| | covers 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 | • , | 50 |
| Fraction of Regional tonnage | | 5,0E-04 |
| Annual site tonnage (tonnes/y | /ear): | 2,5E-02 |
| Maximum daily site tonnage (| | 6,8E-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 | | 10 |
| Local marine water dilution factor: | | 100 |
| Other Operational Conditions affecting Environmental Exposure | | |
| | 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 process (initial release prior to RMM): | | 5,0E-02 |
| Conditions and Measures related to municipal sewage treatment plant | | |
| Risk from environmental expo | | |
| Estimated substance remova treatment (%) | I from wastewater via domestic sewage | 94,6 |

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| Maximum allowable site tonnage (MSafe) based on release following | 17 |
|---|---------|
| 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.

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

| 30000001112 | |
|------------------|---|
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Lubricants - Consumer Low Environmental Release |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC1, PC24, PC31 Environmental Release Categories: ERC9a, ERC9b, ESVOC SpERC 9.6d.v1 |
| Scope of process | Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil. |

| SECTION 2 | OPERATIONAL CONDITIONS A | AND RISK MANAGEMENT |
|---|---------------------------------|---------------------|
| Section 2.1 | Control of Consumer Exposure | e |
| 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 a | mount up to (g): | 6.390 |
| covers skin contact area (cm2): | | 468 |
| Frequency and Duration o | f Úse | |
| Unless stated otherwise. | | |
| Covers use up to (days/year | r): | 365 |
| covers use up to (times/day of use): | | 1 |
| Exposure (hours/event): 8 | | 8 |
| Other Operational Condition | ons affecting Exposure | |
| Liniaga atatad athamidaa | | |

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 glue, wood parquet glue). | Govers concentrations up to 30 70 | |
| grace, recomplemental 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 |
| Covers concentrations up to 50 % |
| |
| |
| covers use up to 29 day/year |
| Covers use up to 1 times/day of use |
| covers skin contact area up to (cm2): 430,00 cm2 |
| For each use event, covers amount up to 142 g |
| Covers use under typical household ventilation. |
| Covers use in room size of 20 m3 |
| Covers exposure up to 1,23 hours/event |
| Covers concentrations up to 50 % |
| · |
| |
| covers use up to 8 day/year |
| Covers use up to 1 times/day of use |
| covers skin contact area up to (cm2): 430,00 cm2 |
| For each use event, covers amount up to 35 g |
| Covers use under typical household ventilation. |
| Covers use in room size of 20 m3 |
| Covers exposure up to 0,33 hours/event |
| |

| Section 2.2 | Control of Environmental Exposure | |
|---|--|---------|
| Substance is complex UVCB. | | |
| Predominantly hydrophobic. | | |
| Amounts Used | | |
| Fraction of EU tonnage used | in region: | 0,1 |
| Regional use tonnage (tonne | s/year): | 50 |
| Fraction of Regional tonnage | used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/ | year): | 2,5E-02 |
| Maximum daily site tonnage (| kg/day): | 6,8E-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 | | 10 |
| Local marine water dilution factor: | | 100 |
| Other Operational Conditions affecting Environmental Exposure | | |
| Release fraction to air from process (initial release prior to RMM): | | 1,0E-02 |
| Release fraction to wastewater from process (initial release prior to RMM): | | 1,0E-02 |
| Release fraction to soil from process (initial release prior to RMM): 1,0E-02 | | 1,0E-02 |
| Conditions and Measures related to municipal sewage treatment plant | | |
| Risk from environmental exposure is driven by freshwater. | | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | | 94,6 |

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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 consumer exposures unless otherwise indicated. | | |

Section 3.2 - Environment

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

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

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

Section 4.2 - Environment

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

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

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

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Exposure Scenario - Consumer

| 30000001111 | |
|------------------|---|
| 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, 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 Expose | ure |
| Product Characteristics | | |
| Physical form of product | Liquid, vapour pressure > 10 k | Pa at STP |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. | |
| | Covers concentration up to (% |): 100 % |
| Amounts Used | | |
| Unless stated otherwise. | | |
| for each use event, covers amount up to (g): | | 13.800 |
| covers skin contact area (cm2): | | 857,5 |
| Frequency and Duration o | 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 at ambient temperatures.

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 % |
| nstant action (aerosol | |
| sprays). pesticides (excipi- | |
| ent only). | |
| one only). | covers use up to 365 day/year |
| | Covers use up to 4 times/day of use |
| | For each use event, covers amount up to 5 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,25 hours/event |
| Air care products Air care, | Covers concentrations up to 10 % |
| continuous action (solid and liquid). | Covers concentrations up to 10 /0 |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 35,70 cm2 |
| | For each use event, covers amount up to 0,48 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 8,00 hours/event |
| Air care products Air care, | Covers concentrations up to 50 % |
| continuous action (solid and liquid). pesticides (excipient only). | |
| 5 y). | 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 |
| Anti-Freeze and de-icing | Covers concentrations up to 1 % |
| products Washing car window. | Covers concentrations up to 1 70 |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | For each use event, covers amount up to 0,5 g |
| | Covers use in a one car garage (34 m3) under typical ventila- |
| | tion. |
| | Covers use in room size of 34 m3 |
| | Covers exposure up to 0,02 hours/event |
| Anti-Freeze and de-icing | Covers concentrations up to 10 % |
| products Pouring into radiator. | , and the second |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | |
| | COVERS SKIN CONTACT AREA UP to CONTACT. 420.00 CINZ |
| | 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 |
| | Covers exposure up to 0,17 hours/event |
| Anti-Freeze and de-icing products Lock de-icer. | Covers concentrations up to 50 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 214,40 cm2 |
| | For each use event, covers amount up to 4 g |
| | Covers use in a one car garage (34 m3) under typical ventilation. |
| | Covers use in room size of 34 m3 |
| | Covers exposure up to 0,25 hours/event |
| | Covers concentrations up to 5 % |
| | 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): 857,50 cm2 |
| | For each use event, covers amount up to 15 g |
| | Covers use under typical household ventilation. |
| ı | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,50 hours/event |
| | Covers concentrations up to 5 % |
| nfectants, pest control) (excipient only). Cleaners, iquids (all purpose clean- ers, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners). | |
| | covers use up to 128 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| • | For each use event, covers amount up to 27 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,33 hours/event |
| | 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 |

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| | Covers exposure up to 0,17 hours/event |
|--|---|
| Coatings and paints, thin- | Covers concentrations up to 1,5 % |
| ners, paint removers Wa- | Covere control and to 1,0 /0 |
| terborne latex wall paint. | |
| torsome latex wan paint. | Covers use under typical household ventilation. |
| | For each use event, covers amount up to 2.760 g |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | Covers use up to 1 times/day of use |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,2 hours/event |
| Coatings and paints, thin- | Covers concentrations up to 27,5 % |
| ners, paint removers Sol- | Covers concentrations up to 21,5 % |
| vent rich, high solid, water | |
| borne paint. | |
| Болго рапк. | covers use up to 6 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 744 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,2 hours/event |
| Coatings and paints, thin- | Covers concentrations up to 50 % |
| ners, paint removers Aerosol spray can. | Covers concentrations up to 30 // |
| | 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 |
| Coatings and paints, thin- | Covers concentrations up to 50 % |
| ners, paint removers Removers (paint-, glue-, wall paper-, sealant-remover). | · |
| paper, occident formovor). | covers use up to 3 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 491 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,00 hours/event |
| Lubricants, greases, re- | Covers concentrations up to 100 % |
| lease products Liquids. | <u>'</u> |
| | 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 |

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| | Covers exposure up to 0,17 hours/event |
|--|--|
| Lubricants, greases, release products Pastes. | Covers concentrations up to 20 % |
| | covers use up to 10 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 468,00 cm2 |
| | For each use event, covers amount up to 34 g |
| | Covers exposure up to 4,00 hours/event |
| Lubricants, greases, release products Sprays. | Covers concentrations up to 50 % |
| | covers use up to 6 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 73 g |
| | 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 | Covers concentrations up to 5 % |
| products (including solvent based products) Laundry 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 |
| 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 |
| Washing and cleaning products (including solvent based products) Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners). | Covers concentrations up to 15 % |
| | covers use up to 128 day/year |
| | Covers use up to 1 times/day of use |

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regulations.

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| | covers skin contact area up to (cm2): 428,00 cm2 |
|---|--|
| | For each use event, 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 (tonnes/y | rear): | 1,2E-02 |
| Fraction of Regional tonnage us | sed locally: | 5,0E-04 |
| Annual site tonnage (tonnes/yea | ar): | 6,2E-06 |
| Maximum daily site tonnage (kg | /day): | 1,7E-05 |
| Frequency and Duration of Us | se | |
| 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 | |
| | cess (initial release prior to RMM): | 0,95 |
| Release fraction to wastewater RMM): | from process (initial release prior to | 2,5E-02 |
| Release fraction to soil from pro | cess (initial release prior to RMM): | 2,5E-02 |
| Conditions and Measures rela | ated to municipal sewage treatment p | olant |
| Risk from environmental exposu | ure is driven by freshwater. | |
| Estimated substance removal fr treatment (%) | om wastewater via domestic sewage | 94,6 |
| Maximum allowable site tonnag total wastewater treatment remo | e (MSafe) based on release following oval (kg/d) | 4,0E-03 |
| Assumed domestic sewage treatment plant flow (m3/d) | | 2,0E+03 |
| | ated to external treatment of waste for | or disposal |
| | of waste should comply with applicable | • |
| al regulations. | | , and the second |
| Conditions and measures rela | ated to external recovery of waste | |

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

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

Section 3.1 - Health

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

Section 3.2 - Environment

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

SECTION 4 GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 - Environment

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

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Exposure Scenario - Consumer

| 30000001110 | |
|------------------|---|
| 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 |
| covers skin contact area (cm2): | | 857,5 |
| Frequency and Duration o | f Use | |
| Unless stated otherwise. | | |
| Covers use up to (days/year): | | 365 |
| covers use up to (times/day of use): | | 1 |
| Exposure (hours/event): | | 6 |
| Other Operational Condition | ons affecting Exposure | · |
| Unless stated otherwise. | <u> </u> | |

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 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 | Covers concentrations up to 30 70 | |
| glue, wood parquet glue). | | |
| gide, wood parquet gide). | covers use up to 1 day/year | |
| | Covers use up to 1 times/day of use | |
| | covers skin contact area up to (cm2): 110,00 cm2 | |
| | For each use event, covers amount up to 6.390 g | |
| | Covers use under typical household ventilation. | |
| | Covers use in room size of 20 m3 | |
| | | |
| Adhasiyas asalanta Olya | Covers exposure up to 6,00 hours/event | |
| Adhesives, sealants Glue | Covers concentrations up to 30 % | |
| from spray. | covers use up to 6 day/year | |
| | covers use up to 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 | |
| A !! | Covers exposure up to 4,00 hours/event | |
| Adhesives, sealants Sealants. | Covers concentrations up to 30 % | |
| | covers use up to 365 day/year | |
| | Covers use up to 1 times/day of use | |
| | covers skin contact area up to (cm2): 35,73 cm2 | |
| | For each use event, covers amount up to 75 g | |
| | Covers use under typical household ventilation. | |
| | Covers use in room size of 20 m3 | |
| | Covers exposure up to 1,00 hours/event | |
| | Avoid using when windows closed. | |
| Anti-Freeze and de-icing products Washing car window. | Covers concentrations up to 1 % | |
| | covers use up to 365 day/year | |
| | Covers use up to 1 times/day of use | |
| | For each use event, covers amount up to 0,5 g | |
| | Covers use in a one car garage (34 m3) under typical ventila- | |
| | tion. | |
| | Covers use in room size of 34 m3 | |
| | Covers exposure up to 0,02 hours/event | |
| Anti-Freeze and de-icing products Pouring into radiator. | Covers concentrations up to 10 % | |
| | covers use up to 365 day/year | |
| | Covers use up to 1 times/day of use | |
| | covers skin contact area up to (cm2): 428,00 cm2 | |
| | For each use event, covers amount up to 2.000 g | |
| | Covers use in a one car garage (34 m3) under typical ventila- | |
| | tion. | |
| | Covers use in room size of 34 m3 | |

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| | Covers exposure up to 0.17 hours/event |
|---|--|
| Anti-Freeze and de-icing | Covers exposure up to 0,17 hours/event Covers concentrations up to 50 % |
| products Lock de-icer. | Covers concentrations up to 50 % |
| products Lock de-icer. | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | |
| | covers skin contact area up to (cm2): 214,40 cm2 |
| | For each use event, covers amount up to 4 g |
| | Covers use in a one car garage (34 m3) under typical ventila- |
| | tion. |
| | Covers use in room size of 34 m3 |
| Distribution I at a face Dis | Covers exposure up to 0,25 hours/event |
| Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Laundry and dish washing products. | Covers concentrations up to 5 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 15 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,50 hours/event |
| Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, liquids (all purpose clean- ers, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners). | Covers concentrations up to 5 % |
| | covers use up to 128 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 27 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| B: 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | Covers exposure up to 0,33 hours/event |
| Biocidal products (e.g. Dis- infectants, pest control) (excipient only). Cleaners, trigger sprays (all purpose cleaners,sanitary products, glass cleaners). | Covers concentrations up to 15 % |
| <u> </u> | covers use up to 128 day/year |
| | Covers use up to 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 |
| | |
| Coatings and naints thin | 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 Me | 1 |
|--|---|
| 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 % |
| ners, paint removers Solvent rich, high solid, water borne paint. | Covers concentrations up to 21,3 % |
| | covers use up to 6 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 744 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,20 hours/event |
| Coatings and paints, thin- ners, paint removers Aero- sol spray can. | Covers concentrations up to 50 % |
| | covers use up to 2 day/year |
| | Covers use up to 1 times/day of use |
| | For each use event, covers amount up to 215 g |
| | Covers use in a one car garage (34 m3) under typical ventilation. |
| | Covers use in room size of 34 m3 |
| | Covers exposure up to 0,33 hours/event |
| Coatings and paints, thin- ners, paint removers Re- movers (paint-, glue-, wall paper-, sealant-remover). | Covers concentrations up to 50 % |
| | covers use up to 3 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 491 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,00 hours/event |
| Fillers, Putties Fillers and putty. | Covers concentrations up to 2 % |
| | covers use up to 12 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 35,73 cm2 |
| | For each use event, covers amount up to 85 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 4,00 hours/event |
| Fillers, Putties Plasters and | Covers concentrations up to 2 % |

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| floor equalizers. | |
|---|---|
| | covers use up to 12 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 13.800 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,00 hours/event |
| Fillers, Putties Modelling clay. | Covers concentrations up to 1 % |
| , | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 254,40 cm2 |
| | For each use event, assumes swallowed amount of 1 g |
| Finger paints | Covers concentrations up to 1,25 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 254,40 cm2 |
| | For each use event, assumes swallowed amount of 1,35 g |
| Non-metal-surface treat- ment products Waterborne | Covers concentrations up to 1,5 % |
| latex wall paint. | covers use up to 4 day/year |
| | covers use up to 4 day/year Covers use up to 1 times/day of use |
| | |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 2.760 g |
| | Covers use under typical household ventilation. Covers use in room size of 20 m3 |
| | |
| Non-metal-surface treat- | Covers exposure up to 2,20 hours/event |
| 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 % |
| . , | 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 |
| | L COVEIS EXPOSUIE UD IO 10:55 HOURS/EVEUI |

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| mont products Domovors | T |
|---|---|
| ment products Removers | |
| (paint-, glue-, wall paper-, | |
| sealant-remover). | covers use up 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 | Covers constant up to co /c |
| products Polishes, spray | |
| (furniture, shoes). | |
| (************************************** | covers use up to 8 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 430,00 cm2 |
| | For each use event, covers amount up to 56 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,33 hours/event |
| Lubricante gracece ro | Covers concentrations up to 100 % |
| Lubricants, greases, re- lease products Liquids. | · |
| | covers use up to 4 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 468,00 cm2 |
| | For each use event, covers amount up to 2.200 g |
| | Covers use in a one car garage (34 m3) under typical ventila- |
| | tion. |
| | 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. | Covers concentrations up to 20 70 |
| lease products rastes. | covers use up to 10 day/year |
| | covers use up to 10 day/year Covers use up to 1 times/day of use |
| | |
| | covers skin contact area up to (cm2): 468,00 cm2 |
| | For each use event, covers amount up to 34 g |
| | Covers exposure up to 4 hours/event |
| 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 | Covers concentrations up to 50 % |
| Polishes, wax / cream | |
| (floor, furniture, shoes). | |
| (1120), 101111111111111111111111111111111111 | covers use up to 29 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 430,00 cm2 |
| | For each use event, covers amount up to 142 g |
| | Covers use under typical household ventilation. |
| | |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 1,23 hours/event |
| Polishes and wax blends | Covers concentrations up to 50 % |
| Polishes, spray (furniture, | |
| shoes). | |
| | covers use up to 8 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 430,00 cm2 |
| | For each use event, covers amount up to 35 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 0,33 hours/event |
| Textile dyes, finishing and | Covers concentrations up to 10 % |
| impregnating products; | |
| including bleaches and | |
| other processing aids | |
| Tariot processing and | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 115 g |
| | |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 1,00 hours/event |

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

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| Amounts Used | |
|---|------------------------|
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 5,1 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 2,6E-03 |
| Maximum daily site tonnage (kg/day): | 7,0E-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): | 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 | olant |
| Risk from environmental exposure 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) | 1,8 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2.000 |
| Conditions and Measures related to external treatment of waste fo | or disposal |
| External treatment and disposal of waste should comply with applicable | e local and/or region |
| al regulations. | |
| Conditions and measures related to external recovery of waste | |
| External recovery and recycling of waste should comply with applicable | e local and/or regiona |
| 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. | | |

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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.