# SAFETY DATA SHEET
According to EC No 1907/2006 as amended as at the date of this SDS

# ShellSol A100 Low Cumene

| Version | Revision Date: | SDS Number: | Date of last issue: 28.03.2024 |
|---|---|---|---|
| 2.0 | 23.04.2025 | 800010059269 | Print Date 30.04.2025 |

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

### 1.1 Product identifier

| | | |
|---|---|---|
| Trade name | : | ShellSol A100 Low Cumene |
| Product code | : | Q7591 |
| Registration number EU | : | 01-2119455851-35-0000 |
| Synonyms | : | Hydrocarbons, C9, aromatics |
| EC-No. | : | 918-668-5 |

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

| | | |
|---|---|---|
| Use of the Substance/Mixture | : | Industrial Solvent.<br>Please refer to section 16 and/or the annexes for the registered 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.<br><br>This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier. |

### 1.3 Details of the supplier of the safety data sheet

| | | |
|---|---|---|
| Manufacturer/Supplier | : | **Shell Chemicals Europe B.V.**<br>PO Box 2334<br>3000 CH Rotterdam<br>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 Sheet | : | sccmsds@shell.com |

### 1.4 Emergency telephone number

+44 (0) 1235 239 670 (This telephone number is available 24 hours per day, 7 days per week)
Intoxication Information Office - 24/7 front help desk provides emergency information in case of intoxication:
tel. (8 5) 236 2052 or mob. 868 753 378

| | | |
|---|---|---|
| Other information | : | SHELLSOL is a trademark owned by Shell Trademark Management B.V. and Shell Brands Inc. and used by affiliates of Shell plc. |

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification (REGULATION (EC) No 1272/2008)**

| | |
|---|---|
| Flammable liquids, Category 3 | H226: Flammable liquid and vapour. |
| Aspiration hazard, Category 1 | H304: May be fatal if swallowed and enters airways. |
| Specific target organ toxicity - single exposure, Category 3, Respiratory Tract | H335: May cause respiratory irritation. |
| Specific target organ toxicity - single exposure, Category 3, Narcotic effects | H336: May cause drowsiness or dizziness. |
| Long-term (chronic) aquatic hazard, Category 2 | H411: Toxic to aquatic life with long lasting effects. |

### 2.2 Label elements

**Labelling (REGULATION (EC) No 1272/2008)**

Hazard pictograms :

Signal word : Danger

Hazard statements :

PHYSICAL HAZARDS:
H226 Flammable liquid and vapour.
HEALTH HAZARDS:
H304 May be fatal if swallowed and enters airways.
H335 May cause respiratory irritation.
H336 May cause drowsiness or dizziness.
ENVIRONMENTAL HAZARDS:
H411 Toxic to aquatic life with long lasting effects.

Supplemental Hazard Statements : EUH066 Repeated exposure may cause skin dryness or cracking.

Precautionary statements :

**Prevention:**

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P243 Take action to prevent static discharges.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

**Response:**

P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.

P331 Do NOT induce vomiting.

**Storage:**

No precautionary phrases.

**Disposal:**

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

### 2.3 Other hazards

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

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

May form flammable/explosive vapour-air mixture.
This material is a static accumulator.
Even with proper grounding and bonding, this material can still accumulate an electrostatic charge.
If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.
Possibility of organ or organ system damage from prolonged exposure; see Section 11 for details.
Target organ(s):
Auditory system

## SECTION 3: Composition/information on ingredients

### 3.1 Substances

**Components**

| Chemical name | CAS-No.<br>EC-No.<br>Index-No.<br>Registration number | Classification | Concentration (% w/w) |
|---|---|---|---|
| Hydrocarbons, C9, aromatics | Not Assigned<br>918-668-5<br>01-2119455851-35 | Flam. Liq. 3; H226<br>Asp. Tox. 1; H304<br>STOT SE 3; H335 (Respiratory Tract)<br>STOT SE 3; H336 (Narcotic effects)<br>Aquatic Chronic 2; H411 | <= 100 |

**Further information**

Contains:

| Chemical | Identification number | Classification | Concentration (% w/w) |
|---|---|---|---|

| name | | | |
|---|---|---|---|
| Cumene | 98-82-8, 202-704-5 | Flam. Liq.3; H226<br>Asp. Tox.1; H304<br>STOT SE3; H335<br>Carc.1B; H350<br>Aquatic Chronic2; H411 | >= 0 - <= 0,099 |
| Benzene | 71-43-2, 200-753-7 | Flam. Liq.2; H225<br>Asp. Tox.1; H304<br>Skin Irrit.2; H315<br>Eye Irrit.2; H319<br>Muta.1B; H340<br>Carc.1A; H350<br>STOT RE1; H372<br>Aquatic Chronic3; H412 | >= 0 - < 0,1 |

## SECTION 4: First aid measures

### 4.1 Description of first aid measures

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

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

If inhaled : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

In case of skin contact : Remove contaminated clothing. Immediately flush skin with large amounts of water for at least 15 minutes, and follow by washing with soap and water if available. If redness, swelling, pain and/or blisters occur, transport to the nearest medical facility for additional treatment.

In case of eye contact : Flush eye with copious quantities of water.
Remove contact lenses, if present and easy to do. Continue rinsing.
If persistent irritation occurs, obtain medical attention.

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

### 4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.
Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, lightheadedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.

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

No specific hazards under normal use conditions.
Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.

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

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

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

### 4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Call a doctor or poison control center for guidance.
Potential for chemical pneumonitis.
Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, 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 firefighting : 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 methods | : | Standard procedure for chemical fires. |
| Further information | : | Keep adjacent containers cool by spraying with water. |

## SECTION 6: Accidental release measures

**6.1 Personal precautions, protective equipment and emergency procedures**

Personal precautions :

Observe all relevant local and international regulations.
Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.
Local authorities should be advised if significant spillages cannot be contained.
6.1.1 For non emergency personnel:
Avoid contact with skin, eyes and clothing.
Isolate hazard area and deny entry to unnecessary or unprotected 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 unprotected personnel.
Do not breathe fumes, vapour.
Do not operate electrical equipment.

**6.2 Environmental precautions**

Environmental precautions : Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by

using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.
Monitor area with combustible gas indicator.

### 6.3 Methods and material for containment and cleaning up

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

Ventilate contaminated area thoroughly.
If contamination of site occurs remediation may require specialist 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 storage facilities are followed.

Advice on safe handling : Avoid inhaling vapour and/or mists.
Avoid contact with skin, eyes and clothing.
Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks.
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Bulk storage tanks should be diked (bunded).
When using do not eat or drink.

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

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

Refer to guidance under Handling section.

Hygiene measures : Wash hands before eating, drinking, smoking and using the toilet. Launder contaminated clothing before re-use. Do not ingest. If swallowed, then seek immediate medical assistance.

**7.2 Conditions for safe storage, including any incompatibilities**

Requirements for storage areas and containers : Refer to section 15 for any additional specific legislation covering 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 flammable.

| | | |
|---|---|---|
| Packaging material | : | Suitable material: For containers, or container linings use mild steel, stainless steel., For container paints, use epoxy paint, zinc silicate paint.<br>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 registered uses under REACH.<br><br>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).<br>IEC/TS 60079-32-1: Electrostatic hazards, guidance |

## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

**Occupational Exposure Limits**

| Components | CAS-No. | Value type (Form of exposure) | Control parameters | Basis |
|---|---|---|---|---|
| Cumene | 98-82-8 | IPRD | 10 ppm<br>50 mg/m3 | LT OEL |
| | Further information: Penetrating through the skin | | | |
| Cumene | | TPRD | 35 ppm<br>170 mg/m3 | LT OEL |
| | Further information: Penetrating through the skin | | | |
| Cumene | | TWA | 10 ppm<br>50 mg/m3 | 2019/1831/EU |
| | Further information: A skin notation assigned to the occupational exposure limit value indicates the possibility of significant uptake through the skin., Indicative | | | |
| Cumene | | STEL | 50 ppm<br>250 mg/m3 | 2019/1831/EU |
| | Further information: A skin notation assigned to the occupational exposure limit value indicates the possibility of significant uptake through the skin., Indicative | | | |
| Benzene | 71-43-2 | IPRD | 0,5 ppm<br>1,65 mg/m3 | LT OEL |
| | Further information: Penetrating through the skin, carcinogenic effects, mutagenic effects | | | |
| Benzene | | TPRD | 6 ppm | LT OEL |

| | | | | |
|---|---|---|---|---|
| | | | 19 mg/m3 | |
| | Further information: Penetrating through the skin, carcinogenic effects, mutagenic effects | | | |
| Benzene | | TWA | 0,25 ppm<br>0,8 mg/m3 | Shell Internal Standard (SIS) for 8-12 hour TWA. |
| Benzene | | STEL | 2,5 ppm<br>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 |
|---|---|---|---|---|
| ShellSol A100 | Workers | Dermal | Long-term systemic effects | 25 mg/kg bw/day |
| ShellSol A100 | Workers | Inhalation | Long-term systemic effects | 150 mg/m3 |
| ShellSol A100 | Consumers | Inhalation | Long-term systemic effects | 32 mg/m3 |
| ShellSol A100 | Consumers | Dermal | Long-term systemic effects | 11 mg/kg |
| ShellSol A100 | Consumers | Oral | Long-term systemic effects | 11 mg/kg |

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

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

**8.2 Exposure controls**

**Engineering measures**

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.
The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Use sealed systems as far as possible.
Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.
Local exhaust ventilation is recommended.
Firewater monitors and deluge systems are recommended.
Eye washes and showers for emergency use.
Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.
Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or subsequent recycle.

**Personal protective equipment**

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

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

Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
Approved to EU Standard EN166.

Hand protection

Remarks : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: butyl-rubber Nitrile rubber gloves.
Incidental contact/Splash protection: Nitrile rubber gloves.
For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.

| | | |
|---|---|---|
| Skin and body protection | : | Skin protection is not required under normal conditions of use.<br>For prolonged or repeated exposures use impervious clothing over parts of the body subject to exposure.<br>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.<br><br>Protective clothing approved to EU Standard EN14605.<br><br>Wear antistatic and flame-retardant clothing, if a local risk assessment deems it so. |
| Respiratory protection | : | If engineering controls do not maintain airborne concentrations 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.<br>Check with respiratory protective equipment suppliers.<br>Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.<br>Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.<br>If air-filtering respirators are suitable for conditions of use:<br>Select a filter suitable for organic gases and vapours [Type A boiling point > 65°C (149°F)] meeting EN14387. |

## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

| | | |
|---|---|---|
| Physical state | : | Liquid. |
| Colour | : | colourless |
| Odour | : | aromatic |
| Odour Threshold | : | Data not available |
| Melting point/freezing point | : | Data not available |
| Boiling point/boiling range | : | 150 - 185 °C |
| Flammability | | |
| Flammability (solid, gas) | : | Not applicable |
| Flammability (liquids) | : | Flammable liquid and vapour. |

Lower explosion limit and upper explosion limit / flammability limit

| | | |
|---|---|---|
| Upper explosion limit / Upper flammability limit | : | 7 %(V) |
| Lower explosion limit / Lower flammability limit | : | 0,6 %(V) |
| Flash point | : | 38 - 50 °C<br>Method: IP 170 |
| Auto-ignition temperature | : | 507 °C |
| Decomposition temperature | | |
| Decomposition temperature | : | Data not available |
| pH | : | Data not available |
| Viscosity | | |
| Viscosity, dynamic | : | Data not available |
| Viscosity, kinematic | : | Typical 0,9 mm2/s (25 °C)<br>Method: ASTM D445 |
| Solubility(ies) | | |
| Water solubility | : | insoluble |
| Partition coefficient: n-octanol/water | : | log Pow: 3,7 - 4,5 |
| Vapour pressure | : | 210 - 1.300 Pa (20 °C) |
| Relative density | : | 0,87 - 0,88 (20 °C)<br>Method: ASTM D4052 |
| Density | : | Typical 876 kg/m3 (15 °C)<br>Method: ASTM D4052 |
| Relative vapour density | : | 4,3 |
| Particle characteristics | | |
| Particle size | : | Data not available |

**9.2 Other information**

| | | |
|---|---|---|
| Explosive properties | : | Not applicable |
| Oxidizing properties | : | Data not available |
| Flammability (liquids) | : | Flammable liquid and vapour. |

| | | |
|---|---|---|
| Evaporation rate | : | < 1<br>Method: ASTM D 3539, nBuAc=1 |
| Conductivity | : | Low conductivity: < 100 pS/m<br><br>The conductivity of this material makes it a static accumulator., A liquid is typically considered nonconductive if its conductivity is below 100 pS/m and is considered semi-conductive if its conductivity is below 10,000 pS/m., Whether a liquid is nonconductive or semi-conductive, the precautions are the same., A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid |
| Surface tension | : | Data not available |
| Molecular weight | : | Data not available |

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

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

### 10.2 Chemical stability

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

### 10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

### 10.4 Conditions to avoid

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

In certain circumstances product can ignite due to static electricity.

### 10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.

### 10.6 Hazardous decomposition products

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

## SECTION 11: Toxicological information

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

Information on likely routes of exposure : Exposure may occur via inhalation, ingestion, skin absorption, skin or eye contact, and accidental ingestion.

**Acute toxicity**

**Components:**

**Hydrocarbons, C9, aromatics:**

Acute oral toxicity : LD 50 (Rat, male and female): > 2000 - <= 5000
Method: Acceptable non-standard method.
Remarks: May be harmful if swallowed.

Acute inhalation toxicity : LC 50 (Rat, male and female): > 2 -<= 10 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: Test(s) equivalent or similar to OECD Test Guideline 403
Remarks: LC50 greater than near-saturated vapour concentration.
Based on available data, the classification criteria are not met.

Acute dermal toxicity : LD 50 (Rabbit, male and female): > 2.000 mg/kg
Method: Test(s) equivalent or similar to OECD Test Guideline 402
Remarks: Based on available data, the classification criteria are not met.

**Skin corrosion/irritation**

**Components:**

**Hydrocarbons, C9, aromatics:**

Species : Rabbit
Method : OECD Test Guideline 404
Remarks : Moderately irritating to skin (but insufficient to classify).
Repeated exposure may cause skin dryness or cracking.

**Serious eye damage/eye irritation**

**Components:**

**Hydrocarbons, C9, aromatics:**

Species : Rabbit
Method : Test(s) equivalent or similar to OECD Test Guideline 405
Remarks : Slightly irritating.
Insufficient to classify.

**Respiratory or skin sensitisation**

**Components:**

**Hydrocarbons, C9, aromatics:**

| | | |
|---|---|---|
| Species | : | Guinea pig |
| Method | : | OECD Test Guideline 406 |
| Remarks | : | Based on available data, the classification criteria are not met. |

**Germ cell mutagenicity**

**Components:**

**Hydrocarbons, C9, aromatics:**

| | | |
|---|---|---|
| Genotoxicity in vitro | : | Method: Test(s) equivalent or similar to OECD Guideline 471<br>Remarks: Based on available data, the classification criteria are not met.<br><br>Method: Test(s) equivalent or similar to OECD Test Guideline 473<br>Remarks: Based on available data, the classification criteria are not met.<br><br>Method: Test(s) equivalent or similar to OECD Test Guideline 476<br>Remarks: Based on available data, the classification criteria are not met. |
| Genotoxicity in vivo | : | Species: Rat<br>Method: Test(s) equivalent or similar to OECD Test Guideline 475<br>Remarks: Based on available data, the classification criteria are not met. |
| Germ cell mutagenicity- Assessment | : | This product does not meet the criteria for classification in categories 1A/1B. |

**Carcinogenicity**

**Components:**

**Hydrocarbons, C9, aromatics:**

| | | |
|---|---|---|
| Remarks | : | Tumours produced in animals are not considered relevant to humans.<br>Not a carcinogen.<br>Based on available data, the classification criteria are not met. |
| Carcinogenicity - Assessment | : | This product does not meet the criteria for classification in categories 1A/1B. |

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

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

**Reproductive toxicity**

**Components:**

**Hydrocarbons, C9, aromatics:**

Effects on fertility : Species: Rat
Sex: male and female
Application Route: Inhalation

Method: Other guideline method.
Remarks: Based on available data, the classification criteria are not met.

Reproductive toxicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

**STOT - single exposure**

**Components:**

**Hydrocarbons, C9, aromatics:**

Exposure routes : Inhalation
Target Organs : Lungs, Central nervous system
Remarks : May cause drowsiness and dizziness.
May cause respiratory irritation.

**STOT - repeated exposure**

**Components:**

**Hydrocarbons, C9, aromatics:**

Remarks : Based on available data, the classification criteria are not met.
Auditory system: prolonged and repeated exposures to high concentrations have resulted in hearing loss in rats.
Kidney: caused kidney effects in male rats which are not considered relevant to humans

**Repeated dose toxicity**

**Components:**

**Hydrocarbons, C9, aromatics:**

| | | |
|---|---|---|
| Species | : | Rat, male and female |
| Application Route | : | Oral |
| Method | : | Test(s) equivalent or similar to OECD Test Guideline 408 |
| Target Organs | : | No specific target organs noted |

| | | |
|---|---|---|
| Species | : | Rat, male and female |
| Application Route | : | Inhalation |
| Test atmosphere | : | vapour |
| Method | : | Test(s) equivalent or similar to OECD Test Guideline 452 |
| Target Organs | : | No specific target organs noted |

**Aspiration toxicity**

**Components:**

**Hydrocarbons, C9, aromatics:**

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

### 11.2 Information on other hazards

**Endocrine disrupting properties**

**Product:**

| | | |
|---|---|---|
| Assessment | : | The substance/mixture does not contain components 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. |

**Further information**

**Product:**

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

**Components:**

**Hydrocarbons, C9, aromatics:**

| | | |
|---|---|---|
| Remarks | : | Classifications by other authorities under varying regulatory frameworks may exist. |

## SECTION 12: Ecological information

### 12.1 Toxicity

**Components:**

**Hydrocarbons, C9, aromatics:**

| | | |
|---|---|---|
| Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): 9,2 mg/l<br>Exposure time: 96 h<br>Method: OECD Test Guideline 203<br>Remarks: Toxic<br>LC/EC/IC50 >1 - <=10 mg/l |
| Toxicity to daphnia and other aquatic invertebrates | : | EL50 (Daphnia magna (Water flea)): 3,2 mg/l<br>Exposure time: 48 h<br>Method: OECD Test Guideline 202<br>Remarks: Toxic<br>LC/EC/IC50 >1 - <=10 mg/l |
| Toxicity to algae/aquatic plants | : | ErL50 (Pseudokirchneriella subcapitata (algae)): 2,9 mg/l<br>Exposure time: 72 h<br>Method: OECD Test Guideline 201<br>Remarks: Toxic<br>LC/EC/IC50 >1 - <=10 mg/l |
| Toxicity to microorganisms | : | NOEC (Activated sludge): > 99 mg/l<br>Exposure time: 0,16 h<br>Method: OECD Test Guideline 209<br>Remarks: Practically non toxic:<br>LC/EC/IC50 > 100 mg/l |
| Toxicity to fish (Chronic toxicity) | : | Remarks: Data not available |
| Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) | : | Remarks: Data not available |

### 12.2 Persistence and degradability

**Components:**

**Hydrocarbons, C9, aromatics:**

| | | |
|---|---|---|
| Biodegradability | : | Biodegradation: 78 %<br>Exposure time: 28 d<br>Method: OECD Test Guideline 301F<br>Remarks: Readily biodegradable.<br>Oxidises rapidly by photo-chemical reactions in air. |

### 12.3 Bioaccumulative potential

**Components:**

**Hydrocarbons, C9, aromatics:**

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

### 12.4 Mobility in soil

**Components:**

**Hydrocarbons, C9, aromatics:**

Mobility : Remarks: Floats on water., If it enters soil, it will adsorb to soil particles and will not be mobile.

### 12.5 Results of PBT and vPvB assessment

**Components:**

**Hydrocarbons, C9, aromatics:**

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

### 12.6 Endocrine disrupting properties

**Product:**

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

### 12.7 Other adverse effects

**Product:**

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

**Components:**

**Hydrocarbons, C9, aromatics:**

Additional ecological information : 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.

## SECTION 14: Transport information

### 14.1 UN number or ID number

**ADR** : 1268

**RID** : 1268

**IMDG** : 1268

**IATA** : 1268

### 14.2 UN proper shipping name

**ADR** : PETROLEUM DISTILLATES, N.O.S.

**RID** : PETROLEUM DISTILLATES, N.O.S.

**IMDG** : PETROLEUM DISTILLATES, N.O.S.
(NAPHTHA)

**IATA** : Petroleum distillates, n.o.s.

**14.3 Transport hazard class(es)**

**ADR** : 3

**RID** : 3

**IMDG** : 3

**IATA** : 3

**14.4 Packing group**

**ADR**

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

**RID**

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

**IMDG**

| | | |
|---|---|---|
| Packing group | : | III |
| Labels | : | 3 |

**IATA**

| | | |
|---|---|---|
| Packing group | : | III |
| Labels | : | 3 |

**14.5 Environmental hazards**

**ADR**

Environmentally hazardous : yes

**RID**

Environmentally hazardous : yes

**IMDG**

Marine pollutant : yes

**14.6 Special precautions for user**

Remarks : Special Precautions: Refer to Section 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

**14.7 Maritime transport in bulk according to IMO instruments**

MARPOL Annex 1 rules apply for bulk shipments by sea.

**Additional Information** : This product may be transported under nitrogen blanketing. Nitrogen is an odourless and invisible gas. Exposure to nitrogen may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a confined space entry.

## SECTION 15: Regulatory information

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

| | | |
|---|---|---|
| REACH - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles (Annex XVII) | : | Conditions of restriction for the following entries should be considered: Cumene (Number on list 28) Benzene (Number on list 72, 5, 29, 28) |
| REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59). | : | This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57). |
| REACH - List of substances subject to authorisation (Annex XIV) | : | Product is not subject to Authorisation under REACH. |

| | | |
|---|---|---|
| Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances. | P5c | FLAMMABLE LIQUIDS |
| | E2 | ENVIRONMENTAL HAZARDS |

**Other regulations:**

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

Product is subject to Resolution No. 1175, December 11th, 2013, of the Government of the Republic of Lithuania on the Amendment of Resolution No. 966 of the Government of the Republic of Lithuania of 17 August 2004 on the approval of the provisions on the prevention, liquidation and investigation of industrial accidents and the description of the criteria for the approval of the list and assignment criteria of substances, mixtures or preparations classified as dangerous substances contained in dangerous objects, based on Seveso III directive (2012/18/EU).

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

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

| | | |
|---|---|---|
| DSL | : | Listed |
| IECSC | : | Listed |
| TSCA | : | Listed |

| | | |
|---|---|---|
| KECI | : | Listed |
| PICCS | : | Listed |
| TCSI | : | Listed |
| AIIC | : | Listed |
| NZIoC | : | Listed |

**15.2 Chemical safety assessment**

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

## SECTION 16: Other information

**Full text of other abbreviations**

| | | |
|---|---|---|
| 2019/1831/EU | : | Europe. Commission Directive 2019/1831/EU establishing a fifth list of indicative occupational exposure limit values |
| LT OEL | : | Lithuania. Occupational Exposure Limits |
| 2019/1831/EU / TWA | : | Limit Value - eight hours |
| 2019/1831/EU / STEL | : | Short term exposure limit |
| LT OEL / IPRD | : | Long term exposure limit |
| LT OEL / TPRD | : | 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 Re-

striction 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 operators.

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 considered to be PBT or vPvB.

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

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

This product is classified as R66 / EUH066 (Repeated exposure may cause skin dryness or cracking). The risk relates to the potential for repeated or prolonged dermal contact. The risk arising from contact is solely related to the 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.

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

**Identified Uses according to the Use Descriptor System**
**Uses - Worker**
Title : Manufacture of substance
- Industrial

**Uses - Worker**
Title : Distribution of substance
- Industrial

**Uses - Worker**
Title : Formulation & (re)packing of substances and mixtures
- Industrial

**Uses - Worker**
Title : Use in coatings
- Industrial

**Uses - Worker**
Title : Use in Cleaning Agents
- Industrial

**Uses - Worker**
Title : Use in coatings
- Professional

**Uses - Worker**
Title : Use in Cleaning Agents
- Professional

**Uses - Worker**
Title : Use in Oil and Gas field drilling and production operations
- Industrial

**Uses - Worker**
Title : Lubricants
- Industrial

**Uses - Worker**
Title : Lubricants
- Professional
Low Environmental Release

**Uses - Worker**
Title : Lubricants
- Professional
High Environmental Release

**Uses - Worker**
Title : Metal working fluids / rolling oils
- Industrial

**Uses - Worker**

Title : Metal working fluids / rolling oils
- Professional

**Uses - Worker**
Title : Use as binders and release agents
- Industrial

**Uses - Worker**
Title : Use as binders and release agents
- Professional

**Uses - Worker**
Title : Use in agrochemicals
- Professional

**Uses - Worker**
Title : Use as a fuel
- Industrial

**Uses - Worker**
Title : Use as a fuel
- Professional

**Uses - Worker**
Title : Functional Fluids
- Professional

**Uses - Worker**
Title : Functional Fluids
- Industrial

**Uses - Worker**
Title : Use in road and construction products
- Professional

**Uses - Worker**
Title : Use in laboratories
- Industrial

**Uses - Worker**
Title : Use in laboratories
- Professional

**Uses - Worker**
Title : Water treatment chemicals
- Industrial

**Uses - Worker**
Title : Water treatment chemicals
- Professional

**Identified Uses according to the Use Descriptor System**
**Uses - Consumer**
Title : Functional Fluids
- Consumer

**Uses - Consumer**
Title : Use as a fuel
- Consumer

**Uses - Consumer**
Title : Use in agrochemicals
- 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 : Use 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.

LT / EN

**Exposure Scenario - Worker**

| **300000000750** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Manufacture of substance- Industrial |
| **Use Descriptor** | **Sector of Use**: SU3, SU8, SU9<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15<br>**Environmental Release Categories**: ERC1, ERC4, ESVOC SpERC 1.1.v1 |
| **Scope of process** | Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities. |

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

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

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|

| | |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 2,4E+04 |
| Fraction of Regional tonnage used locally: | 1 |
| Annual site tonnage (tonnes/year): | 2,4E+04 |
| Maximum daily site tonnage (kg/day): | 7,9E+04 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 300 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from process (initial release prior to RMM): | 1,0E-02 |
| Release fraction to wastewater from process (initial release prior to RMM): | 3,0E-04 |
| Release fraction to soil from process (initial release prior to RMM): | 1,0E-04 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater sediment. | |
| Prevent discharge of undissolved substance to or recover from onsite wastewater. | |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 90 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 15,9 |
| 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.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 1,0E+06 |
| Assumed domestic sewage treatment plant flow (m3/d) | 1,0E+04 |
| **Conditions and Measures related to external treatment of waste for disposal** | |
| During manufacturing no waste of the substance is generated. | |
| **Conditions and measures related to external recovery of waste** | |

| |
|---|
| During manufacturing no waste of the substance is generated. |

| **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.<br>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). |

**Exposure Scenario - Worker**

| **300000000753** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Distribution of substance- Industrial |
| **Use Descriptor** | **Sector of Use**: SU3, SU8, SU9<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15<br>**Environmental Release Categories**: ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7, ESVOC SpERC 1.1b.v1 |
| **Scope of process** | Loading (including marine vessel/barge, rail/road car and IBC loading) and repacking (including drums and small packs) of substance, including its sampling, storage, unloading distribution and associated laboratory activities. |

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

| **Contributing Scenarios** | **Risk Management Measures** |
|---|---|
| General exposures (closed systems)PROC1PROC2PROC3 | No other specific measures identified. |
| General exposures (open systems)PROC4 | No other specific measures identified. |
| Process samplingPROC3 | No other specific measures identified. |
| Laboratory activitiesPROC15 | No other specific measures identified. |
| Bulk transfers(closed systems)PROC8b | No other specific measures identified. |
| Bulk transfers(open systems)PROC8b | No other specific measures identified. |
| Drum and small package fillingPROC9 | No other specific measures identified. |
| Equipment cleaning and maintenancePROC8a | No other specific measures identified. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

| | |
|---|---|
| **Section 2.2** | **Control of Environmental Exposure** |
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 850 |
| Fraction of Regional tonnage used locally: | 2,0E-03 |
| Annual site tonnage (tonnes/year): | 1,7 |
| Maximum daily site tonnage (kg/day): | 85 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 20 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from process (initial release prior to RMM): | 1,0E-03 |
| Release fraction to wastewater from process (initial release prior to 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 prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| Prevent discharge of undissolved substance to or recover from onsite wastewater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 90 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 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.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 2,1E+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.<br>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). |

**Exposure Scenario - Worker**

| **300000000754** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Formulation & (re)packing of substances and mixtures- Industrial |
| **Use Descriptor** | **Sector of Use**: SU3, SU10<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15<br>**Environmental Release Categories**: ERC2, ESVOC SpERC 2.2.v1 |
| **Scope of process** | Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration 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)PROC1PROC2PROC3 | No other specific measures identified. |
| General exposures (open systems)PROC4 | No other specific measures identified. |
| Batch processes at elevated temperaturesOperation is carried out at elevated temperature (> 20°C above ambient temperature).Use in contained batch processesPROC3 | No other specific measures identified. |
| Process samplingPROC3 | No other specific measures identified. |
| Laboratory activitiesPROC15 | No other specific measures identified. |
| Bulk transfersPROC8b | No other specific measures identified. |

| | |
|---|---|
| Mixing operations (open systems)PROC5 | No other specific measures identified. |
| ManualTransfer from/pouring from containersPROC8a | No other specific measures identified. |
| Drum/batch transfersPROC8b | No other specific measures identified. |
| Production or preparation or articles by tabletting, compression, extrusion or pelletisationPROC14 | No other specific measures identified. |
| Drum and small package fillingPROC9 | No other specific measures identified. |
| Equipment cleaning and maintenancePROC8a | No other specific measures identified. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 730 |
| Fraction of Regional tonnage used locally: | 1 |
| Annual site tonnage (tonnes/year): | 730 |
| Maximum daily site tonnage (kg/day): | 7,3E+03 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 100 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from process (after typical onsite RMMs consistent with EU Solvent Emissions Directive requirements): | 1,0E-02 |
| Release fraction to wastewater from process (initial release prior to RMM): | 2,0E-04 |
| Release fraction to soil from process (initial release prior to RMM): | 1,0E-04 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater sediment. | |
| Prevent discharge of undissolved substance to or recover from onsite wastewater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 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.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 3,1E+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.<br>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).

**Exposure Scenario - Worker**

| **300000000755** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use in coatings- Industrial |
| **Use Descriptor** | **Sector of Use**: SU3<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15<br>**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 Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| **Other Operational Conditions affecting Exposure** | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | |
| **Contributing Scenarios** | **Risk Management Measures** |
| General exposures (closed systems)PROC1 | No other specific measures identified. |
| General exposures (closed systems)with sample collectionUse in contained systemsPROC2 | No other specific measures identified. |
| Film formation - force drying, stoving and other technologies.(closed systems)Operation is carried out at elevated temperature (> 20°C above ambient temperature).PROC2 | No other specific measures identified. |
| Mixing operations (closed systems)General expo- | No other specific measures identified. |

| | |
|---|---|
| sures (closed systems)PROC3 | |
| Film formation - air dryingPROC4 | No other specific measures identified. |
| Preparation of material for applicationMixing operations (open systems)PROC5 | No other specific measures identified. |
| Spraying (automatic/robotic)PROC7 | Carry out in a vented booth provided with laminar airflow. |
| ManualSprayingPROC7 | Wear a respirator conforming to EN140 with Type A filter or better. |
| Material transfersNon-dedicated facilityPROC8a | No other specific measures identified. |
| Material transfersDedicated facilityPROC8b | No other specific measures identified. |
| Roller, spreader, flow applicationPROC10 | No other specific measures identified. |
| Dipping, immersion and pouringPROC13 | No other specific measures identified. |
| Laboratory activitiesPROC15 | No other specific measures identified. |
| Material transfersDrum/batch transfersTransfer from/pouring from containersPROC9 | No other specific measures identified. |
| Production or preparation or articles by tabletting, compression, extrusion or pelletisationPROC14 | No other specific measures identified. |
| Equipment cleaning and maintenancePROC8a | No other specific measures identified. |
| Storage.PROC1 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 7,6E+03 |
| Fraction of Regional tonnage used locally: | 1 |
| Annual site tonnage (tonnes/year): | 7,6E+03 |
| Maximum daily site tonnage (kg/day): | 2,5E+04 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 300 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |

| **Other Operational Conditions affecting Environmental Exposure** | |
|---|---|
| Release fraction to air from process (initial release prior to RMM): | 9,8E-01 |
| Release fraction to wastewater from process (initial release prior to RMM): | 7,0E-04 |
| Release fraction to soil from process (initial release prior to RMM): | 0 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater sediment. | |
| Prevent discharge of undissolved substance to or recover from onsite wastewater. | |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 90 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 77,7 |
| 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.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 8,8E+04 |
| 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.<br>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). |

**Exposure Scenario - Worker**

| **300000000757** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use in Cleaning Agents- Industrial |
| **Use Descriptor** | **Sector of Use**: SU3<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC13<br>**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 Conditions affecting Exposure** | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | |

| **Contributing Scenarios** | **Risk Management Measures** |
|---|---|
| Bulk transfersNon-dedicated 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 transfersUse in contained batch processesPROC3 | No other specific measures identified. |
| Application of cleaning products in closed systemsPROC2 | No other specific measures identified. |
| Filling/ preparation of equipment from drums or containers.PROC8b | No other specific measures identified. |
| Use in contained batch processesPROC4 | No other specific measures identified. |

| | |
|---|---|
| Degreasing small objects in cleaning stationPROC13 | No other specific measures identified. |
| Cleaning with low-pressure washersPROC10 | No other specific measures identified. |
| Cleaning with high pressure washersPROC7 | Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).<br>Limit the substance content in the product to 5 %. |
| ManualSurfacesCleaningPROC10 | No other specific measures identified. |
| Storage.PROC1 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 320 |
| Fraction of Regional tonnage used locally: | 3,2E-01 |
| Annual site tonnage (tonnes/year): | 100 |
| Maximum daily site tonnage (kg/day): | 5,0E+03 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 20 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from process (initial release prior to RMM): | 1,0 |
| Release fraction to wastewater from process (initial release prior to RMM): | 3,0E-06 |
| Release fraction to soil from process (initial release prior to RMM): | 0 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| Prevent discharge of undissolved substance to or recover from onsite wastewater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 70 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 8,3E+06 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for disposal** | |
| External treatment and disposal of waste should comply with applicable local and/or regional regulations. | |
| **Conditions and measures related to external recovery of waste** | |
| External recovery and recycling of waste should comply with applicable local and/or regional regulations. | |

| **SECTION 3** | **EXPOSURE ESTIMATION** |
|---|---|
| **Section 3.1 - Health** | |
| The ECETOC TRA tool has been used to estimate workplace exposures 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.<br>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). |

**Exposure Scenario - Worker**

| **300000000756** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use in coatings- Professional |
| **Use Descriptor** | **Sector of Use**: SU22<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19<br>**Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.3b.v1 |
| **Scope of process** | Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| **Other Operational Conditions affecting Exposure** | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | |
| **Contributing Scenarios** | **Risk Management Measures** |
| General exposures (closed systems)PROC1 | No other specific measures identified. |
| Filling/ preparation of equipment from drums or containers.Use in contained systemsPROC2 | 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 dryingOutdoorPROC4 | No other specific measures identified. |
| Film formation - air dryingIndoorPROC4 | No other specific measures identified. |

| | |
|---|---|
| Preparation of material for applicationIndoorPROC5 | No other specific measures identified. |
| Preparation of material for applicationOutdoorPROC5 | No other specific measures identified. |
| Material transfersDrum/batch transfersNon-dedicated facilityPROC8a | No other specific measures identified. |
| Material transfersDrum/batch transfersDedicated facilityPROC8b | No other specific measures identified. |
| Roller, spreader, flow application-IndoorPROC10 | No other specific measures identified. |
| Roller, spreader, flow applicationOutdoorPROC10 | No other specific measures identified. |
| ManualSprayingIndoorPROC11 | Carry out in a vented booth or extracted enclosure.<br>, or:<br>Wear a full face respirator conforming to EN136 with Type A/P2 filter or better. |
| ManualSprayingOutdoorPROC11 | Ensure operation is undertaken outdoors.<br>Avoid carrying out activities involving exposure for more than 4 hours<br>Limit the substance content in the mixture to 50 %.<br>, or:<br>Wear a full face respirator conforming to EN136 with Type A/P2 filter or better. |
| Dipping, immersion and pouringIndoorPROC13 | No other specific measures identified. |
| Dipping, immersion and pouringOutdoorPROC13 | No other specific measures identified. |
| Laboratory activitiesPROC15 | No other specific measures identified. |
| Hand application - fingerpaints, pastels, adhesivesIndoorPROC19 | No other specific measures identified. |
| Hand application - fingerpaints, pastels, adhesivesOutdoorPROC19 | No other specific measures identified. |
| Storage.PROC1 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 2,2E+03 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 1,1 |
| Maximum daily site tonnage (kg/day): | 3,0 |

| **Frequency and Duration of Use** | |
|---|---|
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 9,8E-01 |
| Release fraction to wastewater from wide dispersive use: | 1,0E-02 |
| Release fraction to soil from wide dispersive use (regional only): | 1,0E-02 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| Prevent discharge of undissolved substance to or recover from onsite wastewater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 4,7E+03 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for disposal** | |
| External treatment and disposal of waste should comply with applicable 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.<br>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). |

**Exposure Scenario - Worker**

| **300000000758** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use in Cleaning Agents- Professional |
| **Use Descriptor** | **Sector of Use**: SU22<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13<br>**Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.4b.v1 |
| **Scope of process** | Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand). |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| **Other Operational Conditions affecting Exposure** | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | |
| **Contributing Scenarios** | **Risk Management Measures** |
| Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC8b | No other specific measures identified. |
| Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a | Avoid carrying out activities involving exposure for more than 4 hours |
| Automated process with (semi) closed systems.Use in contained systemsPROC2 | No other specific measures identified. |
| Automated process with (semi) closed systems.Drum/batch transfersUse in contained batch processesPROC3 | No other specific measures identified. |
| Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance products)PROC4 | No other specific measures identified. |

| | |
|---|---|
| ManualSurfacesCleaningDipping, immersion and pouringPROC13 | No other specific measures identified. |
| ManualSurfacesCleaningPROC13 | No other specific measures identified. |
| Cleaning with low-pressure wash-ersRolling, Brushingno spray-ingPROC10 | No other specific measures identified. |
| Cleaning with high pressure washersSprayingIndoorPROC11 | Limit the substance content in the product to 1 %. |
| Cleaning with high pressure washersSprayingOutdoorPROC11 | Limit the substance content in the product to 1 %. |
| ManualSurfacesCleaningPROC10 | Limit the substance content in the product to 25 %. |
| Ad hoc manual application via trigger sprays, dipping, etc.Rolling, BrushingPROC10 | Limit the substance content in the product to 25 %. |
| Application of cleaning products in closed systemsPROC4 | No other specific measures identified. |
| Cleaning of medical devic-esPROC4 | No other specific measures identified. |
| Storage.PROC1 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 2,0 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 1,0E-03 |
| Maximum daily site tonnage (kg/day): | 2,7E-03 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 2,0E-02 |
| Release fraction to wastewater from wide dispersive use: | 1,0E-06 |
| Release fraction to soil from wide dispersive use (regional only): | 0 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process re-lease estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emis-sions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| 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 wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 7,1 |
| 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.<br>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). |

**Exposure Scenario - Worker**

| **300000000783** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use in Oil and Gas field drilling and production operations-Industrial |
| **Use Descriptor** | **Sector of Use**: SU3<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b<br>**Environmental Release Categories**: ERC4 |
| **Scope of process** | Oil field well drilling and production operations (including drilling muds and well cleaning) including material transfers, on-site formulation, well head operations, shaker room activities and related maintenance. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Additional Information** | No exposure assessment presented for the environment. |
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| 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 transfersDedicated facilityPROC8b | No other specific measures identified. |
| Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC8b | No other specific measures identified. |
| Drilling mud (re-)formulationPROC3 | No other specific measures identified. |
| Drill floor operationsPROC4 | No other specific measures identified. |
| Operation of solids filtering equipment - vapour exposuresPROC4 | |
| Treatment and disposal of filtered solidsPROC3 | No other specific measures identified. |
| Process samplingPROC3 | No other specific measures identified. |

| | |
|---|---|
| General exposures (closed systems)PROC1 | No other specific measures identified. |
| Pouring from small contain-ersPROC8a | |
| General exposures (open systems)PROC4 | No other specific measures identified. |
| Equipment cleaning and maintenancePROC8a | No other specific measures identified. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| No exposure assessment presented for the environment. | |

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

| **Section 3.2 -Environment** |
|---|
| No exposure assessment presented for the environment. |
| Quantitative exposure and risk assessment not possible due to lack of emissions to aquatic environment. |
| Qualitative approach used to conclude safe use. |

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

| **Section 4.2 -Environment** |
|---|
| No exposure assessment presented for the environment. |

**Exposure Scenario - Worker**

| **300000000784** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Lubricants- Industrial |
| **Use Descriptor** | **Sector of Use**: SU3<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18<br>**Environmental Release Categories**: ERC4, ERC7, ESVOC SpERC 4.6a.v1 |
| **Scope of process** | Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of machinery/engines and similar articles, reworking on reject articles, equipment maintenance and disposal of wastes. |

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

| **Contributing Scenarios** | **Risk Management Measures** |
|---|---|
| General exposures (closed systems)PROC1PROC2PROC3 | No other specific measures identified. |
| General exposures (open systems)PROC4 | No other specific measures identified. |
| Bulk transfersDedicated facilityPROC8b | No other specific measures identified. |
| Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a | No other specific measures identified. |
| Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC8b | No other specific measures identified. |
| Initial factory fill of equipmentPROC9 | No other specific measures identified. |
| Operation and lubrication of high energy open equipmentPROC17PROC18 | No other specific measures identified. |

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|---|---|
| ManualRolling, Brush-ingPROC10 | No other specific measures identified. |
| Treatment by dipping and pour-ingPROC13 | No other specific measures identified. |
| SprayingPROC7 | Carry out in a vented booth or extracted enclosure. |
| Maintenance (of larger plant items) and machine set upDedi-cated facilityPROC8b | No other specific measures identified. |
| Maintenance (of larger plant items) and machine set upOp-eration is carried out at elevated temperature (> 20°C above ambient tempera-ture).Dedicated facilityPROC8b | Drain down and flush system prior to equipment opening or maintenance. |
| Maintenance of small itemsNon-dedicated facilityPROC8a | No other specific measures identified. |
| Remanufacture of reject arti-clesPROC9 | No other specific measures identified. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 700 |
| Fraction of Regional tonnage used locally: | 0,14 |
| Annual site tonnage (tonnes/year): | 100 |
| Maximum daily site tonnage (kg/day): | 5,0E+03 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 20 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from process (initial release prior to RMM): | 5,0E-03 |
| Release fraction to wastewater from process (initial release prior to RMM): | 3,0E-05 |
| Release fraction to soil from process (initial release prior to RMM): | 1,0E-03 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process re-lease estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emis-sions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater sediment. | |
| Prevent discharge of undissolved substance to or recover from onsite wastewater. | |
| No wastewater treatment required. | |

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|---|---|
| Treat air emission to provide a typical removal efficiency of (%) | 70 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 2,1E+06 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for disposal** | |
| External treatment and disposal of waste should comply with applicable local and/or regional regulations. | |
| **Conditions and measures related to external recovery of waste** | |
| External recovery and recycling of waste should comply with applicable local and/or regional regulations. | |

| **SECTION 3** | **EXPOSURE ESTIMATION** |
|---|---|
| **Section 3.1 - Health** | |
| The ECETOC TRA tool has been used to estimate workplace exposures 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.<br>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. | |

| **Section 4.2 -Environment** |
|---|
| Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. |
| Required removal efficiency for wastewater can be achieved using onsite/offsite technolo- |

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| gies, either alone or in combination. |
| Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. |
| Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org). |

**Exposure Scenario - Worker**

| **300000000785** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Lubricants- ProfessionalLow Environmental Release |
| **Use Descriptor** | **Sector of Use**: SU22<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20<br>**Environmental Release Categories**: ERC9a, ERC9b, ESVOC SpERC 8.6c.v1 |
| **Scope of process** | Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil. |

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

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

| | |
|---|---|
| Operation and lubrication of high energy open equipmentOut-doorPROC17 | Ensure operation is undertaken outdoors.<br>Avoid carrying out activities involving exposure for more than 4 hours |
| Maintenance (of larger plant items) and machine set upPROC8b | No other specific measures identified. |
| Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature).Dedicated facilityPROC8b | Drain down system prior to equipment opening or maintenance. |
| Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).Non-dedicated facilityPROC8a | Drain or remove substance from equipment prior to break-in or maintenance. |
| Engine lubricant servicePROC9 | No other specific measures identified. |
| ManualRolling, BrushingPROC10 | No other specific measures identified. |
| SprayingPROC11 | Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).<br>Avoid carrying out activities involving exposure for more than 4 hours<br>, or:<br>Wear a respirator conforming to EN140 with Type A filter or better. |
| Treatment by dipping and pouringPROC13 | No other specific measures identified. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 12 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 5,8E-03 |
| Maximum daily site tonnage (kg/day): | 1,6E-02 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from 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 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 41 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2.000 |
| **Conditions and Measures related to external treatment of waste for 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.<br>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). |

**Exposure Scenario - Worker**

| **300000000786** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Lubricants- ProfessionalHigh Environmental Release |
| **Use Descriptor** | **Sector of Use**: SU22<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17, PROC18, PROC20<br>**Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.6c.v1 |
| **Scope of process** | Covers the use of formulated lubricants in closed and open systems including transfer operations, operation of engines and similar articles, reworking on reject articles, equipment maintenance and disposal of waste oil. |

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

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

| | |
|---|---|
| Operation and lubrication of high energy open equipmentOut-doorPROC17 | Avoid carrying out operation for more than 4 hours. |
| Maintenance (of larger plant items) and machine set upPROC8b | No other specific measures identified. |
| Maintenance (of larger plant items) and machine set upOperation is carried out at elevated temperature (> 20°C above ambient temperature).Dedicated facilityPROC8b | Drain down system prior to equipment opening or maintenance. |
| Maintenance of small itemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).Non-dedicated facilityPROC8a | Drain or remove substance from equipment prior to break-in or maintenance. |
| Engine lubricant servicePROC9 | No other specific measures identified. |
| ManualRolling, BrushingPROC10 | No other specific measures identified. |
| SprayingPROC11 | Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).<br>Avoid carrying out activities involving exposure for more than 4 hours<br>, or:<br>Wear a respirator conforming to EN140 with Type A filter or better. |
| Treatment by dipping and pouringPROC13 | No other specific measures identified. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 12 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 5,8E-03 |
| Maximum daily site tonnage (kg/day): | 1,6E-02 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 1,5E-01 |
| Release fraction to air from wide dispersive use (regional only): | 5,0E-02 |

| | |
|---|---|
| Release fraction to soil from wide dispersive use (regional only): | 5,0E-02 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 40 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2.000 |
| **Conditions and Measures related to external treatment of waste 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.<br>Where other Risk Management Measures/Operational Conditions are adopted, then users | |

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

| **Section 4.2 -Environment** |
|---|
| Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. |
| Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. |
| Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. |
| Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org). |

**Exposure Scenario - Worker**

| **300000000787** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Metal working fluids / rolling oils- Industrial |
| **Use Descriptor** | **Sector of Use**: SU3<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17<br>**Environmental Release Categories**: ERC4, ESVOC SpERC 4.7a.v1 |
| **Scope of process** | Covers the use in formulated MWFs/rolling oils including transfer operations, rolling and annealing activities, cutting/machining activities, automated and manual application of corrosion protections (including brushing, dipping and spraying), equipment maintenance, draining and disposal of waste oils. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| **Other Operational Conditions affecting Exposure** | |
| 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)PROC1PROC2PROC3 | 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.PROC8bPROC5PROC9 | No other specific measures identified. |
| Process samplingPROC8b | No other specific measures identified. |
| Metal machining operationsPROC17 | No other specific measures identified. |
| Treatment by dipping and pouringPROC13 | No other specific measures identified. |

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| SprayingPROC7 | Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. |
| ManualRolling, BrushingPROC10 | No other specific measures identified. |
| Automated metal rolling/formingUse in contained systemsOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC2 | No other specific measures identified. |
| Semi-automated metal rolling/formingOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC17 | Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. |
| Equipment cleaning and maintenanceDedicated facilityPROC8b | No other specific measures identified. |
| Equipment cleaning and maintenanceNon-dedicated facilityPROC8a | No other specific measures identified. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 10 |
| Fraction of Regional tonnage used locally: | 1 |
| Annual site tonnage (tonnes/year): | 10 |
| Maximum daily site tonnage (kg/day): | 500 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 20 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution 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): | 2,0E-02 |
| Release fraction to wastewater from process (initial release prior to RMM): | 3,0E-05 |
| Release fraction to soil from process (initial release prior to RMM): | 0 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| Prevent discharge of undissolved substance to or recover from onsite | |

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| wastewater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 70 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 8,3E+05 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for 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.<br>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. | |

| **Section 4.2 -Environment** |
|---|
| Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management |

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| measures. |
| Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. |
| Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. |
| Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org). |

**Exposure Scenario - Worker**

| **300000000788** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Metal working fluids / rolling oils- Professional |
| **Use Descriptor** | **Sector of Use**: SU22<br>**Process Categories**: PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13, PROC17<br>**Environmental Release Categories**: ERC8a, ERC8b, ESVOC SpERC 9.6b.v1 |
| **Scope of process** | Covers the use in formulated MWFs including transfer operations, open and contained cutting/machining activities, automated and manual application of corrosion protections, draining and working on contaminated/ reject articles, and disposal of waste oils. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| **Other Operational 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)PROC1PROC2PROC3 | No other specific measures identified. |
| Bulk transfersPROC8b | No other specific measures identified. |
| Filling/ preparation of equipment from drums or containers.PROC5PROC8aPROC8bPROC9 | No other specific measures identified. |
| Process samplingDedicated facilityPROC8b | No other specific measures identified. |
| Metal machining operationsPROC17 | Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). |
| ManualRolling, BrushingPROC10 | No other specific measures identified. |
| SprayingPROC11 | Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). |

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| | Avoid carrying out activities involving exposure for more than 4 hours<br>, or:<br>Wear a respirator conforming to EN140 with Type A/P2 filter or better. |
| Treatment by dipping and pouringPROC13 | No other specific measures identified. |
| Equipment cleaning and maintenance-PROC8aPROC8b | Drain down system prior to equipment opening or maintenance. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 5,0 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 2,5E-03 |
| Maximum daily site tonnage (kg/day): | 6,8E-03 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 5,0E-02 |
| Release fraction to wastewater from wide dispersive use: | 2,5E-02 |
| Release fraction to soil from wide dispersive use (regional only): | 0 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>Sludge should be incinerated, contained or reclaimed. | |
| **Conditions and Measures related to municipal sewage treatment plant** | |
| Estimated substance removal from wastewater via domestic sewage | 93,6 |

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|---|---|
| treatment (%) | |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 18 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for disposal** | |
| External treatment and disposal of waste should comply with applicable local and/or 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.<br>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). |

**Exposure Scenario - Worker**

| **300000000790** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use as binders and release agents- Industrial |
| **Use Descriptor** | **Sector of Use**: SU3<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC6, PROC7, PROC8b, PROC10, PROC13, PROC14<br>**Environmental Release Categories**: ERC4, ESVOC SpERC 4.10a.v1 |
| **Scope of process** | Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| **Other Operational Conditions affecting Exposure** | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | |
| **Contributing Scenarios** | **Risk Management Measures** |
| Material transfersUse in contained systemsPROC1PROC2PROC3 | 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 at elevated temperature (> 20°C above ambient temperature).Aerosol generation due to elevated process temperature-PROC6 | Provide extraction ventilation at points where emissions occur. |
| SprayingMachinePROC7 | Minimise exposure by partial enclosure of the operation or |

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| | equipment and provide extract ventilation at openings. |
| SprayingManualPROC7 | Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).<br>Avoid carrying out activities involving exposure for more than 4 hours |
| ManualRolling, Brush-ingPROC10 | No other specific measures identified. |
| Dipping, immersion and pour-ingPROC13 | No other specific measures identified. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 70 |
| Fraction of Regional tonnage used locally: | 1 |
| Annual site tonnage (tonnes/year): | 70 |
| Maximum daily site tonnage (kg/day): | 3,5E+03 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 20 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from process (initial release prior to RMM): | 1,0 |
| Release fraction to wastewater from process (initial release prior to RMM): | 3,0E-06 |
| Release fraction to soil from process (initial release prior to RMM): | 0 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process re-lease estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emis-sions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| Prevent discharge of undissolved substance to or recover from onsite wastewater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 80 |
| Treat onsite wastewater (prior to receiving water discharge) to provide 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.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 6,5E+06 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for disposal** | |
| External treatment and disposal of waste should comply with applicable local and/or regional regulations. | |
| **Conditions and measures related to external recovery of waste** | |
| External recovery and recycling of waste should comply with applicable local and/or regional regulations. | |

| **SECTION 3** | **EXPOSURE ESTIMATION** |
|---|---|
| **Section 3.1 - Health** | |
| The ECETOC TRA tool has been used to estimate workplace exposures 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.<br>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). |

**Exposure Scenario - Worker**

| **300000000791** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use as binders and release agents- Professional |
| **Use Descriptor** | **Sector of Use**: SU22<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC6, PROC8a, PROC8b, PROC10, PROC11, PROC14<br>**Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.10b.v1 |
| **Scope of process** | Covers the use as binders and release agents including material transfers, mixing, application by spraying, brushing, and handling of waste. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| **Other Operational Conditions affecting Exposure** | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently).<br>Assumes a good basic standard of occupational hygiene is implemented. | |
| **Contributing Scenarios** | **Risk Management Measures** |
| Bulk transfersUse in contained systemsPROC1PROC2PROC3 | No other specific measures identified. |
| Drum/batch transfersPROC8aPROC8b | No other specific measures identified. |
| Mixing operations (closed systems)PROC3 | No other specific measures identified. |
| Mixing operations (open systems)PROC4 | No other specific measures identified. |
| Mold formingPROC14 | No other specific measures identified. |
| Casting operations(open systems)Operation is carried out at elevated temperature (> 20°C above ambient temperature).PROC6 | Provide extraction ventilation at points where emissions occur. |
| SprayingMachinePROC11 | Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings.<br>, or:<br>Wear a respirator conforming to EN140 with Type A filter or |

| | |
|---|---|
| | better. |
| SprayingManualPROC11 | Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).<br>Avoid carrying out activities involving exposure for more than 4 hours |
| ManualRolling, Brush-ingPROC10 | No other specific measures identified. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 30 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 1,5E-02 |
| Maximum daily site tonnage (kg/day): | 4,1E-02 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 9,5E-01 |
| Release fraction to wastewater from wide dispersive use: | 2,5E-02 |
| Release fraction to soil from wide dispersive use (regional only): | 2,5E-02 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process re-lease estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emis-sions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite | 93,6 |

| | |
|---|---|
| (domestic treatment plant) RMMs (%) | |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 82 |
| 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.<br>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). |

**Exposure Scenario - Worker**

| **300000000792** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use in agrochemicals- Professional |
| **Use Descriptor** | **Sector of Use**: SU22<br>**Process Categories**: PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13<br>**Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.11a.v1 |
| **Scope of process** | Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| **Other Operational 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** |
| Transfer from/pouring from containersPROC8b | No other specific measures identified. |
| Mixing in containers.PROC4 | No other specific measures identified. |
| Spraying/ fogging by manual applicationPROC11 | Wear a respirator conforming to EN140 with Type A/P2 filter or better. |
| Spraying/ fogging by machine applicationPROC11 | Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20.<br>, or:<br>Wear a respirator conforming to EN140 with Type A/P2 filter or better. |
| Ad hoc manual application via trigger sprays, dipping, etc.PROC13 | No other specific measures identified. |
| Equipment cleaning and maintenancePROC8a | No other specific measures identified. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

| | |
|---|---|
| **Section 2.2** | **Control of Environmental Exposure** |
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 610 |
| Fraction of Regional tonnage used locally: | 2,0E-03 |
| Annual site tonnage (tonnes/year): | 1,2 |
| Maximum daily site tonnage (kg/day): | 3,4 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 9,0E-01 |
| Release fraction to wastewater from wide dispersive use: | 1,0E-02 |
| Release fraction to soil from wide dispersive use (regional only): | 9,0E-02 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by soil. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 4,7E+03 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for disposal** | |
| External treatment and disposal of waste should comply with applicable 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).

**Exposure Scenario - Worker**

| **300000000793** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use as a fuel- Industrial |
| **Use Descriptor** | **Sector of Use**: SU3<br>**Process Categories**: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16<br>**Environmental Release Categories**: ERC7, ESVOC SpERC 7.12a.v1 |
| **Scope of process** | Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| **Other Operational Conditions affecting Exposure** | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | |
| **Contributing Scenarios** | **Risk Management Measures** |
| Bulk transfersDedicated facilityPROC8b | No other specific measures identified. |
| Drum/batch transfersDedicated facilityPROC8b | No other specific measures identified. |
| General exposures (closed systems)PROC1PROC2 | No other specific measures identified. |
| Use as a fuel(closed systems)PROC16PROC3 | No other specific measures identified. |
| Equipment cleaning and maintenancePROC8a | No other specific measures identified. |
| Storage.PROC1PROC2 | Store substance within a closed system. |
| **Section 2.2** | **Control of Environmental Exposure** |
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 15 |

| | |
|---|---|
| Fraction of Regional tonnage used locally: | 1 |
| Annual site tonnage (tonnes/year): | 15 |
| Maximum daily site tonnage (kg/day): | 750 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 20 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from process (initial release prior to RMM): | 5,0E-03 |
| Release fraction to wastewater from process (initial release prior to RMM): | 1,0E-05 |
| Release fraction to soil from process (initial release prior to RMM): | 0 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 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.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 1,5E+06 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for disposal** | |
| Combustion emissions limited by required exhaust emission controls.<br>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 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.<br>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). |

**Exposure Scenario - Worker**

| **300000000794** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use as a fuel- Professional |
| **Use Descriptor** | **Sector of Use**: SU22<br>**Process Categories**: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16<br>**Environmental Release Categories**: ERC9a, ERC9b, ESVOC SpERC 9.12b.v1 |
| **Scope of process** | Covers the use as a fuel (or fuel additive) and includes activities associated with its transfer, use, equipment maintenance and handling of waste. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| **Other Operational Conditions affecting Exposure** | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | |
| **Contributing Scenarios** | **Risk Management Measures** |
| Bulk transfersDedicated facilityPROC8b | No other specific measures identified. |
| Drum/batch transfersDedicated facilityPROC8b | No other specific measures identified. |
| Refueling.Dedicated facilityPROC8b | No other specific measures identified. |
| General exposures (closed systems)PROC1PROC2PROC3 | No other specific measures identified. |
| Use as a fuel(closed systems)PROC16 | No other specific measures identified. |
| Equipment cleaning and maintenancePROC8a | No other specific measures identified. |
| Storage.PROC1 | Store substance within a closed system. |
| **Section 2.2** | **Control of Environmental Exposure** |
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |

| | |
|---|---|
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 15 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 7,5E-03 |
| Maximum daily site tonnage (kg/day): | 2,1E-02 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 1,0E-04 |
| Release fraction to wastewater from wide dispersive use: | 1,0E-05 |
| Release fraction to soil from wide dispersive use (regional only): | 1,0E-05 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 53 |
| 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.<br>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 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.<br>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). |

**Exposure Scenario - Worker**

| **300000000796** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Functional Fluids- Professional |
| **Use Descriptor** | **Sector of Use**: SU22<br>**Process Categories**: PROC1, PROC2, PROC3, PROC8a, PROC9, PROC20<br>**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** |
| Drum/batch transfersNon-dedicated facilityPROC8a | Use drum pumps. |
| 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.PROC20 | No other specific measures identified. |
| Operation of equipment containing engine oils and similar.Operation is carried out at elevated temperature (> 20°C above ambient temperature).PROC20 | No other specific measures identified. |
| Remanufacture of reject arti- | No other specific measures identified. |

| | |
|---|---|
| clesPROC9 | |
| Equipment maintenance-PROC8a | Drain down system prior to equipment opening or maintenance. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 15 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 7,5E-03 |
| Maximum daily site tonnage (kg/day): | 2,1E-02 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 5,0E-02 |
| Release fraction to wastewater from wide dispersive use: | 2,5E-02 |
| Release fraction to soil from wide dispersive use (regional only): | 2,5E-02 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 52 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for disposal** | |

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|---|
| External treatment and disposal of waste should comply with applicable local and/or regional regulations. |
| **Conditions and measures related to external recovery of waste** |
| External recovery and recycling of waste should comply with applicable local and/or regional regulations. |

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

| **Section 3.2 -Environment** |
|---|
| The Hydrocarbon Block Method has been used to calculate environmental exposure with the Petrorisk model. |

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

**Exposure Scenario - Worker**

| **300000000795** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Functional Fluids- Industrial |
| **Use Descriptor** | **Sector of Use**: SU3<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9<br>**Environmental Release Categories**: ERC7, ESVOC SpERC 7.13a.v1 |
| **Scope of process** | Use as functional fluids e.g. cable oils, transfer oils, coolants, insulators, refrigerants, hydraulic fluids in industrial equipment including maintenance and related material transfers. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| **Other Operational 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 transfers(closed systems)PROC1PROC2 | No other specific measures identified. |
| Drum/batch transfersDedicated facilityPROC8b | No other specific measures identified. |
| Filling of articles/equipment(closed systems)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. |

| | |
|---|---|
| Storage.PROC1PROC2 | Store substance within a closed system. |
| **Section 2.2** | **Control of Environmental Exposure** |
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 15 |
| Fraction of Regional tonnage used locally: | 0,67 |
| Annual site tonnage (tonnes/year): | 10 |
| Maximum daily site tonnage (kg/day): | 500 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 20 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from process (initial release prior to RMM): | 5,0E-03 |
| Release fraction to wastewater from process (initial release prior to RMM): | 3,0E-05 |
| Release fraction to soil from process (initial release prior to RMM): | 1,0E-03 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| Prevent discharge of undissolved substance to or recover from onsite wastewater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 8,3E+05 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for 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.<br>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). |

**Exposure Scenario - Worker**

| **300000000802** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use in road and construction products- Professional |
| **Use Descriptor** | **Sector of Use**: SU22<br>**Process Categories**: PROC8a, PROC8b, PROC9, PROC10, PROC11, PROC13<br>**Environmental Release Categories**: ERC8d, ERC8f, ESVOC SpERC 8.15.v1 |
| **Scope of process** | Application of surface coatings and binders in road and construction activities, including paving uses, manual mastic and in the application of roofing and water-proofing membranes. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure < 0.5 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| 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).<br>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.<br>Avoid carrying out activities involving exposure for more than 4 hours |
| ManualRolling, BrushingPROC10 | Ensure operation is undertaken outdoors. |
| Spraying/ fogging by machine applicationOperation is carried out at elevated temperature (> 20°C above ambient temperature).PROC11 | Ensure operation is undertaken outdoors.<br>Wear a respirator conforming to EN140 with Type A filter or better.<br>Limit the substance content in the mixture to 50 %. |
| Spraying/ fogging by ma- | Ensure operation is undertaken outdoors. |

| | |
|---|---|
| chine applicationPROC11 | Wear a respirator conforming to EN140 with Type A filter or better. |
| Dipping, immersion and pouringPROC13 | No other specific measures identified. |
| Drum and small package fillingPROC9 | No other specific measures identified. |
| Equipment cleaning and maintenancePROC8a | Drain down system prior to equipment opening or maintenance. |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 22 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 1,1E-02 |
| Maximum daily site tonnage (kg/day): | 3,0E-02 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 9,5E-01 |
| Release fraction to wastewater from wide dispersive use: | 1,0E-02 |
| Release fraction to soil from wide dispersive use (regional only): | 4,0E-02 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |

| | |
|---|---|
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 77 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |

**Conditions and Measures related to external treatment of waste for disposal**

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

**Conditions and measures related to external recovery of waste**

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

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

**Section 3.1 - Health**

The ECETOC TRA tool has 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).

**Exposure Scenario - Worker**

| **300000000806** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use in laboratories- Industrial |
| **Use Descriptor** | **Sector of Use**: SU3<br>**Process Categories**: PROC10, PROC15<br>**Environmental Release Categories**: ERC2, ERC4 |
| **Scope of process** | Use of the substance within laboratory settings, including material transfers and equipment cleaning. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure 0.5 - 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers 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** |
| Laboratory activitiesPROC15 | No other specific measures identified. |
| CleaningPROC10 | No other specific measures identified. |
| **Section 2.2** | **Control of Environmental Exposure** |
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 2,5 |
| Fraction of Regional tonnage used locally: | 0,8 |
| Annual site tonnage (tonnes/year): | 2,0 |
| Maximum daily site tonnage (kg/day): | 100 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 20 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |

| | |
|---|---|
| Release fraction to air from process (initial release prior to RMM): | 2,5E-02 |
| Release fraction to wastewater from process (initial release prior to RMM): | 2,0E-02 |
| Release fraction to soil from process (initial release prior to RMM): | 1,0E-04 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater sediment. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 3,1E+03 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for disposal** | |
| External treatment and disposal of waste should comply with applicable 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.<br>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. |

**Exposure Scenario - Worker**

| **300000000810** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use in laboratories- Professional |
| **Use Descriptor** | **Sector of Use**: SU22<br>**Process Categories**: PROC10, PROC15<br>**Environmental Release Categories**: ERC8a, ESVOC SpERC 8.17.v1 |
| **Scope of process** | Use of small quantities within laboratory settings, including material transfers and equipment cleaning. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure 0.5 - 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 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** |
| Laboratory activitiesPROC15 | No other specific measures identified. |
| CleaningPROC10 | No other specific measures identified. |
| **Section 2.2** | **Control of Environmental Exposure** |
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 2,0 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 1,0E-03 |
| Maximum daily site tonnage (kg/day): | 2,7E-03 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |

| **Other Operational Conditions affecting Environmental Exposure** | |
|---|---|
| Release fraction to air from wide dispersive use (regional only): | 5,0E-01 |
| Release fraction to wastewater from wide dispersive use: | 5,0E-01 |
| Release fraction to soil from wide dispersive use (regional only): | 0 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater. | |
| No wastewater treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 0 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 0 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 6,8 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for 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.<br>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). |

**Exposure Scenario - Worker**

| **300000000815** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Water treatment chemicals- Industrial |
| **Use Descriptor** | **Sector of Use**: SU3<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC13<br>**Environmental Release Categories**: ERC3, ERC4, ESVOC SpERC 3.22a.v1 |
| **Scope of process** | Covers the use of the substance for the treatment of water at industrial facilities in open and closed systems. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure 0.5 - 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| **Other Operational 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 systemsPROC2 | No other specific measures identified. |
| Drum/batch transfersDedicated facilityPROC8b | No other specific measures identified. |
| General exposures (closed systems)Use in contained batch processesPROC3 | No other specific measures identified. |
| General exposures (open systems)PROC4 | No other specific measures identified. |
| Pouring from small containersPROC13 | No other specific measures identified. |
| Equipment maintenance-PROC8a | Drain down and flush system prior to equipment opening or maintenance. |
| Storage.PROC1 | Store substance within a closed system. |
| **Section 2.2** | **Control of Environmental Exposure** |
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |

| | |
|---|---|
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 55 |
| Fraction of Regional tonnage used locally: | 0,54 |
| Annual site tonnage (tonnes/year): | 30 |
| Maximum daily site tonnage (kg/day): | 100 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 300 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from process (initial release prior to RMM): | 5,0E-02 |
| Release fraction to wastewater from process (initial release prior to RMM): | 9,5E-01 |
| Release fraction to soil from process (initial release prior to RMM): | 0 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by freshwater sediment. | |
| Onsite waste water treatment required. | |
| Treat air emission to provide a typical removal efficiency of (%) | 0 |
| Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%) | 95,8 |
| If discharging to domestic sewage treatment plant, no secondary wastewater treatment required. | 34,9 |
| **Organisational measures to prevent/limit release from site** | |
| Do not apply industrial sludge to natural soils.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 95,8 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 100 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for 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.<br>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). |

**Exposure Scenario - Worker**

| **300000000820** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Water treatment chemicals- Professional |
| **Use Descriptor** | **Sector of Use**: SU22<br>**Process Categories**: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC13<br>**Environmental Release Categories**: ERC8f, ESVOC SpERC 8.22b.v1 |
| **Scope of process** | Covers the use of the substance for the treatment of water at industrial facilities in closed or contained systems including incidental exposures during material transfers and equipment cleaning. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Worker Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure 0.5 - 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers use of substance/product up to 100% (unless stated differently)., |
| **Frequency and Duration of Use** | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| **Other Operational 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.PROC1PROC2 | Store substance within a closed system. |
| **Section 2.2** | **Control of Environmental Exposure** |
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |

| | |
|---|---|
| Regional use tonnage (tonnes/year): | 25 |
| Fraction of Regional tonnage used locally: | 6,0E-02 |
| Annual site tonnage (tonnes/year): | 1,5 |
| Maximum daily site tonnage (kg/day): | 4,0 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 1,0E-02 |
| Release fraction to wastewater from wide dispersive use: | 9,9E-01 |
| Release fraction to soil from wide dispersive use (regional only): | 0 |
| **Technical conditions and measures at process level (source) to prevent release** | |
| Common practices vary across sites thus conservative process release estimates used. | |
| **Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil** | |
| Risk from environmental exposure is driven by 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 the required removal efficiency of >= (%) | 0,7 |
| 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.<br>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 (%) | 93,6 |
| Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 48 |
| 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.<br>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). |

**Exposure Scenario - Consumer**

| **300000001122** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Functional Fluids - Consumer |
| **Use Descriptor** | **Sector of Use**: SU21<br>**Product Categories**: PC16, PC17<br>**Environmental Release Categories**: ERC9a, ERC9b, ESVOC SpERC 9.13c.v1 |
| **Scope of process** | Use of sealed items containing functional fluids e.g. transfer oils, hydraulic fluids, refrigerants. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
|---|---|
| **Section 2.1** | **Control of Consumer Exposure** |
| **Product Characteristics** | |
| Physical form of product | Liquid, vapour pressure > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. |
| | Covers concentration up to (%): 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 of 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 Conditions affecting Exposure** | |
| Unless stated otherwise.<br>Covers use at ambient temperatures.<br>Covers use in room size of 20m3<br>Covers use under typical household ventilation. | |
| **Product Categories** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
| Heat transfer fluids Liquids. | Covers concentrations up to 100 % |
| | covers use up to 4 day/year |
| | covers skin contact area up to (cm2): 468,00 cm2 |
| | For each use event, covers amount up to 2.200 g |
| | Covers use in a one car garage (34 m3) under typical ventilation. |
| | Covers use in room size of 34 m3 |
| | Covers exposure up to 0,17 hours/event |
| Hydraulic fluids Liquids. | Covers concentrations up to 100 % |
| | covers use up to 4 day/year |

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

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 15 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 7,5E-03 |
| Maximum daily site tonnage (kg/day): | 2,1E-02 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 5,0E-02 |
| Release fraction to wastewater from wide dispersive use: | 2,5E-02 |
| Release fraction to soil from wide dispersive use (regional only): | 2,5E-02 |
| **Conditions and Measures related to municipal sewage treatment plant** | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 52 |
| 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.<br>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). |

**Exposure Scenario - Consumer**

| **300000001121** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use as a fuel - Consumer |
| **Use Descriptor** | **Sector of Use**: SU21<br>**Product Categories**: PC13<br>**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 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): | 37.500 |
| covers skin contact area (cm2): | 420 |
| **Frequency and Duration of Use** | |
| Unless stated otherwise. | |
| covers use up to (times/day of use): | 1 |
| Exposure (hours/event): | 2 |
| **Other Operational Conditions affecting Exposure** | |
| Unless stated otherwise.<br>Covers use at ambient temperatures.<br>Covers use in room size of 20m3<br>Covers use under typical household ventilation. | |
| **Product Categories** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
| Fuels Liquid: Automotive Refuelling. | Covers concentrations up to 100 % |
| | covers use up to 52 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 210,00 cm2 |
| | For each use event, covers amount up to 37.500 g |
| | Covers outdoor use. |
| | Covers use in room size of 100 m3 |
| | Covers exposure up to 0,05 hours/event |
| Fuels Liquid Scooter Refuelling. | Covers concentrations up to 100 % |
| | covers use up to 52 day/year |

| | |
|---|---|
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 210,00 cm2 |
| | For each use event, covers amount up to 3.750 g |
| | Covers outdoor use. |
| | Covers use in room size of 100 m3 |
| | Covers exposure up to 0,03 hours/event |
| Fuels Liquid, Garden 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 20m3 |
| | Covers exposure up to 0,03 hours/event |
| Fuels Liquid: Lamp oil. | Covers concentrations up to 100 % |
| | covers use up to 52 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 210,00 cm2 |
| | For each use event, covers amount up to 100 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20m3 |
| | Covers exposure up to 0,01 hours/event |

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

| **Amounts Used** | |
|---|---|
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 210 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |

| | |
|---|---|
| Annual site tonnage (tonnes/year): | 0,11 |
| Maximum daily site tonnage (kg/day): | 0,29 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 1,0E-04 |
| Release fraction to wastewater from wide dispersive use: | 1,0E-05 |
| Release fraction to soil from wide dispersive use (regional only): | 1,0E-05 |
| **Conditions and Measures related to municipal sewage treatment plant** | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 750 |
| 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.<br>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.<br>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. | |

| **Section 4.2 -Environment** |
|---|
| Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. |
| Required removal efficiency for wastewater can be achieved using onsite/offsite technolo- |

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|---|
| gies, either alone or in combination. |
| Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. |
| Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org). |

**Exposure Scenario - Consumer**

| **300000001120** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use in agrochemicals - Consumer |
| **Use Descriptor** | **Sector of Use**: SU21<br>**Product Categories**: PC27<br>**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 kPa at STP |
| Concentration of the Sub-stance in Mixture/Article | Unless stated otherwise. |
| | Covers concentration up to (%): 50 % |
| **Amounts Used** | |
| Unless stated otherwise. | |
| covers skin contact area (cm2): | 857,5 |
| **Frequency and Duration of Use** | |
| Unless stated otherwise. | |
| Covers use up to (days/year): | 365 |
| covers use up to (times/day of use): | 1 |
| Exposure (hours/event): | 4 |
| **Other Operational Conditions affecting Exposure** | |
| Unless stated otherwise.<br>Covers use at ambient temperatures.<br>Covers use in room size of 20m3<br>Covers use under typical household ventilation. | |
| **Product Categories** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
| Fertilizers Lawn and garden preparations. | Covers concentrations up to 15 % |
| | covers use up to 365 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, assumes swallowed amount of 0,3 g |
| | Covers exposure up to 4 hours/event |
| Plant protection products | Covers concentrations up to 15 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |

| | |
|---|---|
| | For each use event, assumes swallowed amount of 0,3 g |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 20 |
| Fraction of Regional tonnage used locally: | 2,0E-03 |
| Annual site tonnage (tonnes/year): | 4,0E-02 |
| Maximum daily site tonnage (kg/day): | 0,11 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 9,0E-01 |
| Release fraction to wastewater from wide dispersive use: | 1,0E-02 |
| Release fraction to soil from wide dispersive use (regional only): | 9,0E-02 |
| **Conditions and Measures related to municipal sewage treatment plant** | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 227 |
| 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.<br>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). |

**Exposure Scenario - Consumer**

| **300000001119** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Lubricants - Consumer High Environmental Release |
| **Use Descriptor** | **Sector of Use**: SU21<br>**Product Categories**: PC1, PC24, PC31<br>**Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.6c.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 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): | 6.390 |
| covers skin contact area (cm2): | 468 |
| **Frequency and Duration of Use** | |
| Unless stated otherwise. | |
| covers use up to (times/day of use): | 1 |
| Exposure (hours/event): | 6 |
| **Other Operational Conditions affecting Exposure** | |
| Unless stated otherwise.<br>Covers use at ambient temperatures.<br>Covers use in room size of 20m3<br>Covers use under typical household ventilation. | |
| **Product Categories** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
| Adhesives, sealants Glues, hobby use. | Covers concentrations up to 30 % |
| | covers use up to 365 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 35,73 cm2 |
| | For each use event, covers amount up to 9 g |
| | Covers use in room size of 20m3 |
| | Covers use under typical household ventilation. |
| | Covers exposure up to 4 hours/event |

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

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

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 12 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 5,8E-03 |
| Maximum daily site tonnage (kg/day): | 1,6E-02 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 1,5E-01 |
| Release fraction to wastewater from wide dispersive use: | 5,0E-02 |
| Release fraction to soil from wide dispersive use (regional only): | 5,0E-02 |
| **Conditions and Measures related to municipal sewage treatment plant** | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 40 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |

| **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.<br>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). |

**Exposure Scenario - Consumer**

| **300000001118** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Lubricants - Consumer Low Environmental Release |
| **Use Descriptor** | **Sector of Use**: SU21<br>**Product Categories**: PC1, PC24, PC31<br>**Environmental Release Categories**: ERC9a, ERC9b, ESVOC SpERC 9.6d.v1 |
| **Scope of process** | Covers the consumer use of formulated lubricants in closed and open systems including transfer operations, application, operation of engines and similar articles, equipment maintenance and disposal of waste oil. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** | |
|---|---|---|
| **Section 2.1** | **Control of Consumer Exposure** | |
| **Product Characteristics** | | |
| Physical form of product | Liquid, vapour pressure > 10 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): | | 6.390 |
| covers skin contact area (cm2): | | 468 |
| **Frequency and Duration of Use** | | |
| Unless stated otherwise. | | |
| covers use up to (times/day of use): | | 1 |
| Exposure (hours/event): | | 6 |
| **Other Operational Conditions affecting Exposure** | | |
| Unless stated otherwise.<br>Covers use at ambient temperatures.<br>Covers use in room size of 20m3<br>Covers use under typical household ventilation. | | |
| **Product Categories** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** | |
| Adhesives, sealants Glues, hobby use. | Covers concentrations up to 30 % | |
| | covers use up to 365 day/year | |
| | covers use up to 1 times/day of use | |
| | covers skin contact area up to (cm2): 35,73 cm2 | |
| | For each use event, covers amount up to 9 g | |
| | Covers use in room size of 20m3 | |
| | Covers use under typical household ventilation. | |
| | Covers exposure up to 4 hours/event | |

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

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

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 12 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 5,8E-03 |
| Maximum daily site tonnage (kg/day): | 1,6E-02 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 1,0E-02 |
| Release fraction to wastewater from wide dispersive use: | 1,0E-02 |
| Release fraction to soil from wide dispersive use (regional only): | 1,0E-02 |
| **Conditions and Measures related to municipal sewage treatment plant** | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 41 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+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.<br>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). |

**Exposure Scenario - Consumer**

| **300000001117** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use in Cleaning Agents - Consumer |
| **Use Descriptor** | **Sector of Use**: SU21<br>**Product Categories**: PC3, PC4, PC8 (excipient only), PC9a, PC24, PC35, PC38<br>**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 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): | 857,50 |
| **Frequency and Duration of 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 Conditions affecting Exposure** | |
| Unless stated otherwise.<br>Covers use at ambient temperatures.<br>Covers use in room size of 20m3<br>Covers use under typical household ventilation. | |
| **Product Categories** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** |
| Air care products Air care, instant action (aerosol sprays). | Covers concentrations up to 50 % |
| | covers use up to 365 day/year |
| | covers use up to 4 times/day of use |
| | For each use event, covers amount up to 0,1 g |
| | Covers use under typical household ventilation. |

| | |
|---|---|
| | Covers use in room size of 20m3 |
| | Covers exposure up to 0,25 hours/event |
| Air care products Air care, instant action (aerosol sprays). pesticides (excipient only). | 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 0,5 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, continuous action (solid and liquid). | Covers concentrations up to 10 % |
| | covers use up to 365 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 35,70 cm2 |
| | For each use event, covers amount up to 0,48 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 8,00 hours/event |
| Air care products Air care, continuous action (solid and liquid). pesticides (excipient only). | 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): 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 products Washing car window. | Covers concentrations up to 1 % |
| | covers use up to 365 day/year |
| | covers use up to 1 times/day of use |
| | For each use event, covers amount up to 0,5 g |
| | Covers use in a one car garage (34 m3) under typical ventilation. |
| | Covers use in 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 |
| | Covers exposure up to 0,17 hours/event |
| Anti-Freeze and de-icing products Lock de-icer. | Covers concentrations up to 50 % |
| | covers use up to 365 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 214,40 cm2 |
| | For each use event, covers amount up to 4 g |
| | Covers use in a one car garage (34 m3) under typical ventilation. |
| | Covers use in room size of 34 m3 |
| | Covers exposure up to 0,25 hours/event |
| Biocidal products (e.g. Disinfectants, pest control) (excipient only). Laundry and dish washing products. | Covers concentrations up to 5 % |
| | covers use up to 365 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 15 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20m3 |
| | Covers exposure up to 0,50 hours/event |
| Biocidal products (e.g. Disinfectants, pest control) (excipient only). 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 20m3 |
| | Covers exposure up to 0,33 hours/event |
| Biocidal products (e.g. Disinfectants, pest control) (excipient only). Cleaners, trigger sprays (all purpose cleaners,sanitary products, glass cleaners). | Covers concentrations up to 15 % |
| | covers use up to 128 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,00 cm2 |
| | For each use event, covers amount up to 35 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20m3 |

| | |
|---|---|
| | Covers exposure up to 0,17 hours/event |
| Coatings and paints, thinners, paint removers Waterborne latex wall paint. | Covers concentrations up to 1,5 % |
| | covers use up to 4 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 2.760 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,2 hours/event |
| Coatings and paints, thinners, paint removers Solvent rich, high solid, water borne paint. | Covers concentrations up to 27,5 % |
| | covers use up to 6 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 744 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,2 hours/event |
| Coatings and paints, thinners, paint removers 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 ventilation. |
| | Covers use in room size of 24 m3 |
| | Covers exposure up to 0,33 hours/event |
| Coatings and paints, thinners, paint removers Removers (paint-, glue-, wall paper-, sealant-remover). | Covers concentrations up to 50 % |
| | covers use up to 3 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 491 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,00 hours/event |
| Lubricants, greases, release products Liquids. | Covers concentrations up to 100 % |
| | covers use up to 4 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 468,00 cm2 |
| | For each use event, covers amount up to 2.200 g |
| | Covers use in a one car garage (34 m3) under typical ventilation. |

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

| | |
|---|---|
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,00 cm2 |
| | For each use event, covers amount up to 35 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20m3 |
| | Covers exposure up to 0,17 hours/event |
| 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 20m3 |
| | Covers exposure up to 1,00 hours/event |

| **Section 2.2** | **Control of Environmental Exposure** |
|---|---|
| Substance is complex UVCB. | |
| Predominantly hydrophobic. | |
| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/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 wide dispersive use (regional only): | 9,5E-01 |
| Release fraction to wastewater from wide dispersive use: | 2,5E-02 |
| Release fraction to soil from wide dispersive use (regional only): | 2,5E-02 |
| **Conditions and Measures related to municipal sewage treatment plant** | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 18 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste for disposal** | |
| External treatment and disposal of waste should comply with applicable local and/or 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.

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

**Exposure Scenario - Consumer**

| **300000001109** | |
|---|---|
| **SECTION 1** | **EXPOSURE SCENARIO TITLE** |
| **Title** | Use in coatings - Consumer |
| **Use Descriptor** | **Sector of Use**: SU21<br>**Product Categories**: PC1, PC4, PC8 (excipient only), PC9a, PC9b, PC9c, PC15, PC18, PC23, PC31, PC34<br>**Environmental Release Categories**: ERC8a, ERC8b, ESVOC SpERC 8.3c.v1 |
| **Scope of process** | Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning. |

| **SECTION 2** | **OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES** | |
|---|---|---|
| **Section 2.1** | **Control of Consumer Exposure** | |
| **Product Characteristics** | | |
| Physical form of product | Liquid, vapour pressure > 10 kPa at STP | |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. | |
| | Covers concentration up to (%): 100 % | |
| **Amounts Used** | | |
| Unless stated otherwise. | | |
| for each use event, covers amount up to (g): | | 13.800 |
| covers skin contact area (cm2): | | 857,50 |
| **Frequency and Duration of Use** | | |
| Unless stated otherwise. | | |
| Covers use up to (days/year): | | 365 |
| covers use up to (times/day of use): | | 1 |
| Exposure (hours/event): | | 6 |
| **Other Operational Conditions affecting Exposure** | | |
| Unless stated otherwise.<br>Covers use at ambient temperatures.<br>Covers use in room size of 20m3<br>Covers use under typical household ventilation. | | |

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

| | |
|---|---|
| | Covers use under typical household ventilation. |
| | Covers exposure up to 4 hours/event |
| Adhesives, sealants Glues DIY-use (carpet glue, tile glue, wood parquet glue). | Covers concentrations up to 30 % |
| | covers use up to 1 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 110,00 cm2 |
| | For each use event, covers amount up to 6.390 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 6,00 hours/event |
| Adhesives, sealants Glue from spray. | Covers concentrations up to 30 % |
| | covers use up to 6 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 35,73 cm2 |
| | For each use event, covers amount up to 85,05 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 4,00 hours/event |
| Adhesives, sealants Sealants. | Covers concentrations up to 30 % |
| | covers use up to 365 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 35,73 cm2 |
| | For each use event, covers amount up to 75 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Avoid using when windows closed. |
| | Covers exposure up to 1,00 hours/event |
| Anti-Freeze and de-icing products Washing car window. | Covers concentrations up to 1 % |
| | covers use up to 365 day/year |
| | covers use up to 1 times/day of use |
| | For each use event, covers amount up to 0,5 g |
| | Covers use in a one car garage (34 m3) under typical ventilation. |
| | 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 ventilation. |
| | 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 30 % |
| | covers use up to 365 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 214,40 cm2 |
| | For each use event, covers amount up to 4 g |
| | Covers use in a one car garage (34 m3) under typical ventilation. |
| | Covers use in room size of 34 m3 |
| | Covers exposure up to 0,25 hours/event |
| Biocidal products (e.g. Disinfectants, pest control) (excipient only). Laundry and dish washing products. | Covers concentrations up to 5 % |
| | covers use up to 365 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 15 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20m3 |
| | Covers exposure up to 0,50 hours/event |
| Biocidal products (e.g. Disinfectants, pest control) (excipient only). 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 20m3 |
| | Covers exposure up to 0,33 hours/event |
| Biocidal products (e.g. Disinfectants, pest control) (excipient only). Cleaners, trigger sprays (all purpose cleaners,sanitary products, glass cleaners). | Covers concentrations up to 15 % |
| | covers use up to 128 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,00 cm2 |
| | For each use event, covers amount up to 35 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20m3 |
| | Covers exposure up to 0,17 hours/event |
| Coatings and paints, thin- | Covers concentrations up to 1,5 % |

| | |
|---|---|
| ners, paint removers Waterborne 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, thinners, paint removers Solvent rich, high solid, water borne paint. | Covers concentrations up to 27,5 % |
| | covers use up to 6 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 744 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,20 hours/event |
| Coatings and paints, thinners, paint removers 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 ventilation. |
| | Covers use in room size of 34 m3 |
| | Covers exposure up to 0,33 hours/event |
| Coatings and paints, thinners, paint removers Removers (paint-, glue-, wall paper-, sealant-remover). | Covers concentrations up to 50 % |
| | covers use up to 3 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 491 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,00 hours/event |
| Fillers, Putties Fillers and putty. | Covers concentrations up to 2 % |
| | covers use up to 12 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 35,73 cm2 |
| | For each use event, covers amount up to 85 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 4,00 hours/event |
| Fillers, Putties Plasters and | Covers concentrations up to 2 % |

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| floor equalizers. | |
| | covers use up to 12 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 13.800 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20 m3 |
| | Covers exposure up to 2,00 hours/event |
| Fillers, Putties Modelling clay. | Covers concentrations up to 1 % |
| | covers use up to 365 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 254,40 cm2 |
| | For each use event, assumes swallowed amount of 1 g |
| Finger paints | Covers concentrations up to 1,25 % |
| | covers use up to 365 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 254,40 cm2 |
| | For each use event, assumes swallowed amount of 1,35 g |
| Non-metal-surface treatment products Waterborne latex wall paint. | Covers concentrations up to 1,5 % |
| | covers use up to 4 day/year |
| | covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 2.760 g |
| | Covers use under typical household ventilation. |
| | Covers use in room size of 20m3 |
| | Covers exposure up to 2,20 hours/event |
| Non-metal-surface treatment 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 treatment 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 ventilation. |
| | Covers use in room size of 34 m3 |
| | Covers exposure up to 0,33 hours/event |
| Non-metal-surface treat- | Covers concentrations up to 50 % |

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

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

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

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| Readily biodegradable. | |
| **Amounts Used** | |
| Fraction of EU tonnage used in region: | 0,1 |
| Regional use tonnage (tonnes/year): | 270 |
| Fraction of Regional tonnage used locally: | 5,0E-04 |
| Annual site tonnage (tonnes/year): | 0,13 |
| Maximum daily site tonnage (kg/day): | 0,37 |
| **Frequency and Duration of Use** | |
| Continuous release. | |
| Emission Days (days/year): | 365 |
| **Environmental factors not influenced by risk management** | |
| Local freshwater dilution factor: | 10 |
| Local marine water dilution factor: | 100 |
| **Other Operational Conditions affecting Environmental Exposure** | |
| Release fraction to air from wide dispersive use (regional only): | 9,85E-01 |
| Release fraction to wastewater from wide dispersive use: | 1,0E-02 |
| Release fraction to soil from wide dispersive use (regional only): | 5,0E-03 |
| **Conditions and Measures related to municipal sewage treatment plant** | |
| Estimated substance removal from wastewater via domestic sewage treatment (%) | 93,6 |
| Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d) | 840 |
| Assumed domestic sewage treatment plant flow (m3/d) | 2,0E+03 |
| **Conditions and Measures related to external treatment of waste 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.<br>Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. | |

| **Section 4.2 -Environment** |
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| Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. |
| Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. |
| Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination. |
| Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org). |