

SAFETY DATA SHEET

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

Methyl Ethyl Ketone

| | | | |
|---------|----------------|--------------|--------------------------------|
| Version | Revision Date: | SDS Number: | Date of last issue: 09.09.2022 |
| 3.1 | 07.03.2023 | 800001033918 | Print Date 08.03.2023 |

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

1.1 Product identifier

| | |
|-------------------------------|---|
| Trade name | : Methyl Ethyl Ketone |
| Product code | : S2113 |
| Registration number EU | : 01-2119457290-43-0000 |
| CAS-No. | : 78-93-3 |
| Other means of identification | : butan-2-one, Ethyl methyl ketone, MEK |

EC-No. : 201-159-0

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

| | |
|-----------------------------------|---|
| Use of the Sub- stance/Mixture | : Use only in industrial processes. 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. |

1.3 Details of the supplier of the safety data sheet

| | |
|----------------------------------|---|
| Manufacturer/Supplier | : Shell Chemicals Europe B.V. PO Box 2334 3000 CH Rotterdam Netherlands |
| Telephone | : +31 (0)10 441 5137 / +31 (0)10 441 5191 |
| Telefax | : +31 (0)20 716 8316/ +31 (0)20 713 9230 |
| Contact for Safety Data 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)
NPIC: 018092166 (office hours only)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

| | |
|-------------------------------|---|
| Flammable liquids, Category 2 | H225: Highly flammable liquid and vapour. |
| Eye irritation, Category 2 | H319: Causes serious eye irritation. |

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

H336: May cause drowsiness or dizziness.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms



Signal word

: Danger

Hazard statements

:
PHYSICAL HAZARDS:
H225 Highly flammable liquid and vapour.
HEALTH HAZARDS:
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
ENVIRONMENTAL HAZARDS:
Not classified as environmental hazard according to CLP criteria.

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.
Response:
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P304 + P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P312 Call a POISON CENTER/ doctor if you feel unwell.
Storage:
P403 + P235 Store in a well-ventilated place. Keep cool.
Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

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

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

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

Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a flashback fire danger.
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.
Exposure may enhance the toxicity of other materials.
See Chapter 11 for details.

SECTION 3: Composition/information on ingredients

3.1 Substances

Components

| Chemical name | CAS-No. EC-No. | Concentration (% w/w) |
|---------------------|----------------------|-----------------------|
| Methyl ethyl ketone | 78-93-3 201-159-0 | 100 |

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 : No treatment necessary under normal conditions of use. If symptoms persist, obtain medical advice.
- In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.
- In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses, if present and easy to do. Continue rinsing.

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Transport to the nearest medical facility for additional treatment.

If swallowed : 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. Rinse mouth.
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 : Not considered to be an inhalation hazard under normal conditions of use.
Possible respiratory irritation signs and symptoms may include a temporary burning sensation of the nose and throat, coughing, and/or difficulty breathing.
No specific hazards under normal use conditions.
Skin irritation signs and symptoms may include a burning sensation, redness, or swelling.
Ingestion may result in nausea, vomiting and/or diarrhoea.
Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.
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.
If material enters lungs, signs and symptoms may include coughing, choking, wheezing, difficulty in breathing, chest congestion, shortness of breath, and/or fever.
Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance.
Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination.
Continued inhalation may result in unconsciousness and death.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT!
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 : Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires

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only.

Unsuitable extinguishing media : None

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Carbon monoxide may be evolved if incomplete combustion occurs.

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 : Clear fire area of all non-emergency personnel.
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 the 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.
The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Vapour may form an explosive mixture with air.
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.
Stay upwind and keep out of low areas.
6.1.2 For emergency responders:
Avoid contact with skin, eyes and clothing.
Isolate hazard area and deny entry to unnecessary or unprotected personnel.
Stay upwind and keep out of low areas.

6.2 Environmental precautions

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

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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. Ventilate contaminated area thoroughly. Monitor area with combustible gas indicator.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : 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. 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.

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 contact with skin, eyes and clothing.
Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols.
Bulk storage tanks should be diked (bunded).
Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks.
Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to

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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.

Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.

Do NOT use compressed air for filling, discharging, or handling operations.

Product Transfer : Refer to guidance under Handling section.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers : The vapour is heavier than air. Beware of accumulation in pits and confined spaces. Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Packaging material : Suitable material: For containers, or container linings use mild steel, stainless steel.
Unsuitable material: Natural, butyl, neoprene or nitrile rubbers.

Suitable material: Aluminium

Container Advice : Containers, even those that have been emptied, can contain explosive vapours. 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.

Ensure that all local regulations regarding handling and storage facilities are followed.

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

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

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

| Components | CAS-No. | Value type (Form of exposure) | Control parameters | Basis |
|---------------------|---------|-------------------------------|----------------------|--------|
| Methyl ethyl ketone | 78-93-3 | OELV - 8 hrs (TWA) | 200 ppm 600 mg/m3 | IE OEL |

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| | Further information: Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body | | | |
| Methyl ethyl ketone | | OELV - 15 min (STEL) | 300 ppm 900 mg/m ³ | IE OEL |
| | Further information: Substances which have the capacity to penetrate intact skin when they come in contact with it, and be absorbed into the body | | | |
| Methyl ethyl ketone | | TWA | 200 ppm 600 mg/m ³ | 2000/39/EC |
| | Further information: Indicative | | | |
| Methyl ethyl ketone | | STEL | 300 ppm 900 mg/m ³ | 2000/39/EC |
| | Further information: Indicative | | | |

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 |
|------------------------------|-----------|-----------------|----------------------------|-----------------------|
| Methyl ethyl ketone, 78-93-3 | Workers | Dermal | Long-term systemic effects | 1161 mg/kg bw/day |
| Methyl ethyl ketone, 78-93-3 | Workers | Inhalation | Long-term systemic effects | 600 mg/m ³ |
| Methyl ethyl ketone, 78-93-3 | Consumers | Oral | Long-term systemic effects | 31 mg/kg bw/day |
| Methyl ethyl ketone, 78-93-3 | Consumers | Dermal | Long-term systemic effects | 412 mg/kg bw/day |
| Methyl ethyl ketone, 78-93-3 | Consumers | Inhalation | Long-term systemic effects | 106 mg/m ³ |

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

| Substance name | Environmental Compartment | Value |
|----------------|--|-------|
| Remarks: | Exposure assessments have not been presented for the environment therefore PNEC values not required. | |

8.2 Exposure controls

Engineering measures

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.
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.

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:

General Information:

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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 : Wear goggles for use against liquids and gas.
Wear full face shield if splashes are likely to occur.
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. Incidental contact/Splash protection: PVC or neoprene 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 : Wear antistatic and flame-retardant clothing, if a local risk

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assessment deems it so.
Skin protection is not required under normal conditions of use.
For prolonged or repeated exposures use impervious clothing over parts of the body subject to exposure.
If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Standard, and provide employee skin care programmes.
Protective clothing approved to EU Standard EN14605.

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. Check with respiratory protective equipment suppliers. Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus. Where air-filtering respirators are suitable, select an appropriate combination of mask and filter. If air-filtering respirators are suitable for conditions of use: Select a filter suitable for organic gases and vapours [Type A boiling point > 65°C (149°F)] meeting EN14387.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|----------------------|
| Physical state | : Liquid. |
| Colour | : clear |
| Odour | : characteristic |
| Odour Threshold | : Data not available |
| Melting point/freezing point | : -86 °C |
| Boiling point/boiling range | : 79,5 °C |
| Flammability | |
| Flammability (solid, gas) | : Not applicable |
| Lower explosion limit and upper explosion limit / flammability limit | |
| Upper explosion limit / upper flammability limit | : 11,5 %(V) |
| Lower explosion limit / Lower flammability limit | : 1,8 %(V) |

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| Flash point | : | -9 °C Method: Abel |
| Auto-ignition temperature | : | 515 °C |
| Decomposition temperature | : | |
| Decomposition temperature | : | Data not available |
| pH | : | Not applicable |
| Viscosity | : | |
| Viscosity, dynamic | : | 0,42 mPa.s (20 °C) Method: ASTM D445 |
| Viscosity, kinematic | : | Data not available |
| Solubility(ies) | : | |
| Water solubility | : | 250 g/l Miscible. (20 °C) |
| Solubility in other solvents | : | Data not available |
| Partition coefficient: n-octanol/water | : | log Pow: 0,3 |
| Vapour pressure | : | 12,600 Pa (20 °C) |
| Relative density | : | 0,804 - 0,806 (20 °C) Method: ASTM D4052 |
| Density | : | 0,804 - 0,806 kg/m ³ (20 °C) Method: ASTM D4052 |
| Relative vapour density | : | 2,4 (20 °C) |
| Particle characteristics | : | |
| Particle size | : | Data not available |

9.2 Other information

| | | |
|----------------------|---|--|
| Explosives | : | Not applicable |
| Oxidizing properties | : | Data not available |
| Evaporation rate | : | 3,3 Method: DIN 53170, di-ethyl ether=1 |
| Conductivity | : | Electrical conductivity: > 10,000 pS/m |

A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence

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the conductivity of a liquid, This material is not expected to be a static accumulator.

Surface tension : 24,8 mN/m, 20 °C

Molecular weight : 72,11 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

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

10.2 Chemical stability

No hazardous reaction is expected when handled and stored according to provisions

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.
Prevent vapour accumulation.
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

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

Product:

Acute oral toxicity : LD 50 (Rat, male and female): >2000 -<= 5000 mg/kg
Method: Test(s) equivalent or similar to OECD Test Guideline 423
Test substance: Butan-2-ol

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

Acute dermal toxicity : LD 50 (Rabbit, male): > 10 ml/kg/bw
Method: Test(s) equivalent or similar to OECD Test Guideline 402
Remarks: Based on available data, the classification criteria are not met.

Components:

Methyl ethyl ketone:

Acute oral toxicity : LD 50 (Rat, male and female): >2000 -<= 5000 mg/kg
Method: Test(s) equivalent or similar to OECD Test Guideline 423
Test substance: Butan-2-ol
Remarks: Based on available data, the classification criteria are not met.

Acute dermal toxicity : LD 50 (Rabbit, male): > 10 ml/kg/bw
Method: Test(s) equivalent or similar to OECD Test Guideline 402
Remarks: Based on available data, the classification criteria are not met.

Skin corrosion/irritation

Product:

Species : Rabbit
Method : OECD Test Guideline 404
Test substance : Butan-2-ol
Remarks : Based on available data, the classification criteria are not met.
Repeated exposure may cause skin dryness or cracking.

Components:

Methyl ethyl ketone:

Species : Rabbit
Method : OECD Test Guideline 404
Test substance : Butan-2-ol
Remarks : Based on available data, the classification criteria are not met.
Repeated exposure may cause skin dryness or cracking.

Serious eye damage/eye irritation

Product:

Species : Rabbit
Method : Test(s) equivalent or similar to OECD Test Guideline 405
Remarks : Causes serious eye irritation.

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Components:

Methyl ethyl ketone:

| | | |
|---------|---|--|
| Species | : | Rabbit |
| Method | : | Test(s) equivalent or similar to OECD Test Guideline 405 |
| Remarks | : | Causes serious eye irritation. |

Respiratory or skin sensitisation

Product:

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

Components:

Methyl ethyl ketone:

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

Germ cell mutagenicity

Product:

| | | |
|-----------------------|---|---|
| Genotoxicity in vitro | : | Method: Test(s) equivalent or similar to OECD Guideline 471 Remarks: Based on available data, the classification criteria are not met. |
|-----------------------|---|---|

Method: Test(s) equivalent or similar to OECD Test Guideline 473

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

Method: Test(s) equivalent or similar to OECD Test Guideline 476

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

Method: Test(s) equivalent or similar to OECD Test Guideline 480

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

Method: Test(s) equivalent or similar to OECD Test Guideline 482

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

| | | |
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| Genotoxicity in vivo | : | Species: Mouse Method: Test(s) equivalent or similar to OECD Test Guideline 474 |
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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.

Components:

Methyl ethyl ketone:

Genotoxicity in vitro : Method: Test(s) equivalent or similar to OECD Guideline 471
Remarks: Based on available data, the classification criteria are not met.

Method: Test(s) equivalent or similar to OECD Test Guideline 473
Remarks: Based on available data, the classification criteria are not met.

Method: Test(s) equivalent or similar to OECD Test Guideline 476
Remarks: Based on available data, the classification criteria are not met.

Method: Test(s) equivalent or similar to OECD Test Guideline 480
Remarks: Based on available data, the classification criteria are not met.

Method: Test(s) equivalent or similar to OECD Test Guideline 482
Remarks: Based on available data, the classification criteria are not met.

Genotoxicity in vivo : Species: Mouse
Method: Test(s) equivalent or similar to OECD Test Guideline 474
Remarks: Based on available data, the classification criteria are not met.

Germ cell mutagenicity- Assessment : This product does not meet the criteria for classification in categories 1A/1B.

Carcinogenicity

Product:

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

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Components:

Methyl ethyl ketone:

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

| Material | GHS/CLP Carcinogenicity Classification |
|---------------------|--|
| Methyl ethyl ketone | No carcinogenicity classification. |

Reproductive toxicity

Product:

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

Method: Equivalent or similar to OECD Test Guideline 416
Test substance: Butan-2-ol
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.

Components:

Methyl ethyl ketone:

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

Method: Equivalent or similar to OECD Test Guideline 416
Test substance: Butan-2-ol
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

Product:

Exposure routes : Inhalation
Target Organs : Central nervous system
Remarks : May cause drowsiness or dizziness.

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Components:

Methyl ethyl ketone:

| | | |
|-----------------|---|------------------------------------|
| Exposure routes | : | Inhalation |
| Target Organs | : | Central nervous system |
| Remarks | : | May cause drowsiness or dizziness. |

STOT - repeated exposure

Product:

| | | |
|---------|---|--|
| Remarks | : | Based on available data, the classification criteria are not met. Low systemic toxicity on repeated exposure. |
|---------|---|--|

Components:

Methyl ethyl ketone:

| | | |
|---------|---|--|
| Remarks | : | Based on available data, the classification criteria are not met. Low systemic toxicity on repeated exposure. |
|---------|---|--|

Repeated dose toxicity

Product:

| | | |
|-------------------|---|--|
| Species | : | Rat, male and female |
| Application Route | : | Inhalation |
| Test atmosphere | : | vapour |
| Method | : | Test(s) equivalent or similar to OECD Test Guideline 413 |
| Target Organs | : | No specific target organs noted |

Components:

Methyl ethyl ketone:

| | | |
|-------------------|---|--|
| Species | : | Rat, male and female |
| Application Route | : | Inhalation |
| Test atmosphere | : | vapour |
| Method | : | Test(s) equivalent or similar to OECD Test Guideline 413 |
| Target Organs | : | No specific target organs noted |

Aspiration toxicity

Product:

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

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

Components:

Methyl ethyl ketone:

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

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

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

Components:

Methyl ethyl ketone:

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

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 308 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): 2.029 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201
Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

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Toxicity to fish (Chronic toxicity) : Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : Remarks: Data not available

Toxicity to microorganisms : (Pseudomonas putida): 1.150 mg/l
Exposure time: 16 h
Method: Other guideline method.
Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Components:

Methyl ethyl ketone:

Toxicity to fish : Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 308 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202
Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to algae/aquatic plants : EC50 (Selenastrum capricornutum (green algae)): 2.029 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 201
Remarks: Practically non toxic:
LL/EL/IL50 > 100 mg/l

Toxicity to microorganisms : (Pseudomonas putida): 1.150 mg/l
Exposure time: 16 h
Method: Other guideline method.
Remarks: Practically non toxic:
LL/EL/IL50 > 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

Product:

Biodegradability : Biodegradation: 98 %
Exposure time: 28 d
Method: OECD Test Guideline 301D
Remarks: Readily biodegradable.

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|----------------|------------------------------|-----------------------------|---|

Oxidises rapidly by photo-chemical reactions in air.

Components:

Methyl ethyl ketone:

Biodegradability : Biodegradation: 98 %
Exposure time: 28 d
Method: OECD Test Guideline 301D
Remarks: Readily biodegradable.
Oxidises rapidly by photo-chemical reactions in air.

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: Does not bioaccumulate significantly.

Components:

Methyl ethyl ketone:

Bioaccumulation : Remarks: Does not bioaccumulate significantly.

12.4 Mobility in soil

Product:

Mobility : Remarks: Dissolves in water.

Components:

Methyl ethyl ketone:

Mobility : Remarks: Dissolves in water.

12.5 Results of PBT and vPvB assessment

Product:

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

Components:

Methyl ethyl ketone:

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:

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| | | |
|------------|---|---|
| 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 | : | Does not have ozone depletion potential. |
|-----------------------------------|---|--|

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

Components:

Methyl ethyl ketone:

| | | |
|-----------------------------------|---|--|
| Additional ecological information | : | Does not have ozone depletion potential. |
|-----------------------------------|---|--|

SECTION 13: Disposal considerations

13.1 Waste treatment methods

| | | |
|------------------------|---|---|
| Product | : | <p>Recover or recycle if possible.</p> <p>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.</p> <p>Do not dispose into the environment, in drains or in water courses.</p> <p>Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.</p> <p>Waste, spills or used product is dangerous waste.</p> <p>Disposal should be in accordance with applicable regional, national, and local laws and regulations.</p> <p>Local regulations may be more stringent than regional or national requirements and must be complied with.</p> <p>MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.</p> |
| Contaminated packaging | : | <p>Drain container thoroughly.</p> <p>After draining, vent in a safe place away from sparks and fire.</p> <p>Residues may cause an explosion hazard.</p> <p>Do not, puncture, cut, or weld uncleaned drums.</p> <p>Send to drum recoverer or metal reclaimer.</p> <p>Dispose in accordance with prevailing regulations, preferably</p> |

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to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.

SECTION 14: Transport information

14.1 UN number or ID number

| | | |
|------|---|------|
| ADR | : | 1193 |
| RID | : | 1193 |
| IMDG | : | 1193 |
| IATA | : | 1193 |

14.2 UN proper shipping name

| | | |
|------|---|---------------------|
| ADR | : | ETHYL METHYL KETONE |
| RID | : | ETHYL METHYL KETONE |
| IMDG | : | ETHYL METHYL KETONE |
| IATA | : | METHYL ETHYL KETONE |

14.3 Transport hazard class(es)

| | | |
|------|---|---|
| ADR | : | 3 |
| RID | : | 3 |
| IMDG | : | 3 |
| IATA | : | 3 |

14.4 Packing group

| | |
|------------------------------|------|
| ADR | |
| Packing group | : II |
| Classification Code | : F1 |
| Hazard Identification Number | : 33 |
| Labels | : 3 |
| RID | |
| Packing group | : II |
| Classification Code | : F1 |
| Hazard Identification Number | : 33 |
| Labels | : 3 |
| IMDG | |
| Packing group | : II |
| Labels | : 3 |
| IATA | |
| Packing group | : II |
| Labels | : 3 |

14.5 Environmental hazards

ADR

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Environmentally hazardous : no

RID

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

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

14.7 Maritime transport in bulk according to IMO instruments

| | |
|--------------------|----------------------------|
| Pollution category | : Z |
| Ship type | : 3; Must be Double Hulled |
| Product name | : Methyl ethyl ketone |

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.

Transport in bulk according to Annex II of Marpol and the IBC Code

SECTION 15: Regulatory information

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

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

Other regulations:

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

The Safety, Health and Welfare at Work Acts 2005 & 2010. Chemicals Act 2008 & 2010. Car-

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riage of Dangerous Goods by Road Regulations 2010.

Product is subject to the Control of Major Accident Hazards involving Dangerous Substances Regulations 2015 (S.I. No. 209 of 2015) based on Seveso III directive (2012/18/EU).

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

| | |
|-------|----------|
| AIIC | : Listed |
| DSL | : Listed |
| IECSC | : Listed |
| KECI | : Listed |
| ENCS | : Listed |
| PICCS | : Listed |
| TSCA | : Listed |
| TCSI | : Listed |
| NZIoC | : Listed |

15.2 Chemical safety assessment

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

SECTION 16: Other information

Full text of other abbreviations

| | |
|-------------------------------|--|
| 2000/39/EC | : Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values |
| IE OEL | : Ireland. List of Chemical Agents and Occupational Exposure Limit Values - Schedule 1 |
| 2000/39/EC / TWA | : Limit Value - eight hours |
| 2000/39/EC / STEL | : Short term exposure limit |
| IE OEL / OELV - 8 hrs (TWA) | : Occupational exposure limit value (8-hour reference period) |
| IE OEL / OELV - 15 min (STEL) | : Occupational exposure limit value (15-minute reference period) |

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 as-

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sociated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Training advice : Provide adequate information, instruction and training for 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.

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 data base, EC 1272 regulation, etc).

Classification of the mixture:

| | |
|--------------|------|
| Flam. Liq. 2 | H225 |
| Eye Irrit. 2 | H319 |
| STOT SE 3 | H336 |

Classification procedure:

On basis of test data.
Expert judgement and weight of evidence determination.
Expert judgement and weight of evidence determination.

Identified Uses according to the Use Descriptor System Uses - Worker

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| | | |
|---|---|--|
| Title | : | Manufacture of substance- Industrial |
| Uses - Worker | | |
| Title | : | Use as an intermediate- Industrial |
| Uses - Worker | | |
| Title | : | Distribution of substance- Industrial |
| Uses - Worker | | |
| Title | : | Formulation & (re)packing of substances and mixtures- Industrial |
| Uses - Worker | | |
| Title | : | Uses in Coatings- Industrial |
| Uses - Worker | | |
| Title | : | Uses in Coatings- Professional |
| Uses - Worker | | |
| Title | : | Use in Cleaning Agents- Industrial |
| Uses - Worker | | |
| Title | : | Use in Cleaning Agents- Professional |
| Uses - Worker | | |
| Title | : | Lubricants- Industrial |
| Uses - Worker | | |
| Title | : | Metal working fluids / rolling oils- Industrial |
| Uses - Worker | | |
| Title | : | Use in Agrochemicals uses- Professional |
| Uses - Worker | | |
| Title | : | Use as a fuel- Industrial |
| Uses - Worker | | |
| Title | : | Use as a fuel- Professional |
| Uses - Worker | | |
| Title | : | Use in laboratories- Industrial |
| Uses - Worker | | |
| Title | : | Use in laboratories- Professional |
| Identified Uses according to the Use Descriptor System | | |
| Uses - Consumer | | |
| Title | : | Use as a fuel - Consumer |
| Uses - Consumer | | |
| Title | : | Use in Agrochemicals uses - Consumer |

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Uses - Consumer

Title : Lubricants
- Consumer

Uses - Consumer

Title : Uses in Coatings
- Consumer

Uses - Consumer

Title : Use in Cleaning Agents
- Consumer

Uses - Consumer

Title : Other Consumer Uses
- 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.

IE / EN

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Exposure Scenario - Worker

| | |
|-------------------------|---|
| 300000000279 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Manufacture of substance- Industrial |
| Use Descriptor | Sector of Use: SU3, SU8, SU9 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15 Environmental Release Categories: ERC1, ERC4 |
| Scope of process | Manufacture of the substance or use as a process chemical or extraction agent within closed or contained systems. Includes incidental exposures during recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container). |

| | |
|-------------------------------|--|
| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes a good basic standard of occupational hygiene is implemented. | |

| | |
|---|---|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| 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. |

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| | |
|--|--|
| Bulk transfers(closed systems)PROC8b | No other specific measures identified. |
| Equipment cleaning and maintenancePROC8a | Drain down system prior to equipment opening or maintenance. |
| 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. |

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

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

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Exposure Scenario - Worker

| | |
|-------------------------|--|
| 300000000280 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use as an intermediate- Industrial |
| Use Descriptor | Sector of Use: SU3, SU8, SU9 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15 Environmental Release Categories: ERC6a |
| Scope of process | Use of substance as an intermediate (not related to Strictly Controlled Conditions). Includes recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container). |

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| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes a good basic standard of occupational hygiene is implemented. | |

| | |
|---|---|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| 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 sys- | No other specific measures identified. |

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| tems)PROC8b | |
| Equipment cleaning and maintenancePROC8a | Drain down system prior to equipment opening or maintenance. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

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

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

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|---|--|
| Section 3.2 -Environment | |
| No exposure assessment presented for the environment. | |

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

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

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Exposure Scenario - Worker

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|-------------------------|--|
| 300000000281 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Distribution of substance- Industrial |
| Use Descriptor | Sector of Use: SU3, SU8, SU9 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15 Environmental Release Categories: ERC1, ERC2, ERC3, ERC4, ERC5, ERC6a, ERC7 |
| 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. |

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| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES |
| Additional Information | No exposure assessment presented for the environment. |

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|---|--|
| Section 2.1 | Control of Worker Exposure |
| Product Characteristics | |
| Physical form of product | Liquid, vapour pressure > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%, Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes a good basic standard of occupational hygiene is implemented. | |

| | |
|---|---|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| General exposures (closed systems)PROC1PROC2PROC3 | No other specific measures identified. |
| General exposures (open systems)PROC4 | Clear transfer lines prior to de-coupling. No other specific measures identified. |
| Process samplingPROC3 | No other specific measures identified. |
| Laboratory activitiesPROC15 | No other specific measures identified. |
| Bulk transfers(open systems)PROC8b | No other specific measures identified. |

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| Bulk transfers(closed systems)PROC8b | No other specific measures identified. |
| Drum and small package fillingPROC9 | Fill containers/cans at dedicated filling points supplied with local extract ventilation. |
| Equipment cleaning and maintenancePROC8a | Drain down and flush system prior to equipment opening or maintenance. |
| 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. | |

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|---|
| Section 3.2 -Environment |
| No exposure assessment presented for the environment. |

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

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

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Exposure Scenario - Worker

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|-------------------------|---|
| 300000000283 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Formulation & (re)packing of substances and mixtures- Industrial |
| Use Descriptor | Sector of Use: SU3, SU10 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15 Environmental Release Categories: ERC2 |
| Scope of process | Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tableting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities. |

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|-------------------------------|--|
| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes a good basic standard of occupational hygiene is implemented. | |

| | |
|---|---|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| General exposures (closed systems)PROC1PROC2PROC3 | No other specific measures identified. |
| General exposures (open systems)PROC4 | No other specific measures identified. |
| Batch processes at elevated temperatures(closed systems)PROC3 | No other specific measures identified. |
| Process samplingPROC3 | No other specific measures identified. |
| Laboratory activitiesPROC15 | No other specific measures identified. |

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|---|---|
| Bulk transfersDedicated facilityPROC8b | No other specific measures identified. |
| Mixing operations (open systems)PROC5 | Provide extraction ventilation at points where emissions occur. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| ManualTransfer from/pouring from containersPROC8a | Use drum pumps or carefully pour from container. |
| Drum/batch transfersDedicated facilityPROC8b | Use drum pumps or carefully pour from container. |
| Production or preparation or articles by tableting, compression, extrusion or pelletisationPROC14 | Provide extraction ventilation at points where emissions occur. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Drum and small package fillingPROC9 | Fill containers/cans at dedicated filling points supplied with local extract ventilation. |
| Equipment cleaning and maintenancePROC8a | Drain down and flush system prior to equipment opening or maintenance. |
| Storage.PROC1PROC2 | Store substance within a closed system. Transfer via enclosed lines. Locate bulk storage outdoors. |

| | |
|---|--|
| 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. |

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

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| Section 4.2 -Environment |
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| No exposure assessment presented for the environment. |
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Exposure Scenario - Worker

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|-------------------------|--|
| 300000000284 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Uses in Coatings- Industrial |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15 Environmental Release Categories: ERC4 |
| 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 |
| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | |

| | |
|---|---|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| General exposures (closed systems)PROC1 | No other specific measures identified. |
| General exposures (closed systems)with sample collectionPROC2 | Ensure material transfers are under containment or extract ventilation. |
| Film formation - air drying(closed systems)PROC2 | Ensure material transfers are under containment or extract ventilation. |

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| Mixing operations (closed systems)PROC3 | Ensure material transfers are under containment or extract ventilation. |
| Film formation - air drying(open systems)PROC4 | Provide extraction ventilation at points where emissions occur. |
| Preparation of material for applicationMixing operations (open systems)PROC5 | Provide extraction ventilation at points where emissions occur. |
| Spraying (automatic/robotic)PROC7 | Carry out in a vented booth provided with laminar airflow. |
| ManualSprayingPROC7 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Wear a respirator conforming to EN140 with Type A filter or better. |
| Material transfersPROC8aPROC8b | Provide extraction ventilation at points where emissions occur. , or: Avoid carrying out activities involving exposure for more than 1 hour. |
| Roller, spreader, flow applicationPROC10 | Use ventilation to extract vapours from freshly coated articles/objects. |
| Dipping, immersion and pouringPROC13 | Provide extraction ventilation at points where emissions occur. Avoid manual contact with wet work pieces. |
| Laboratory activitiesPROC15 | Provide extraction ventilation at points where emissions occur. |
| Material transfersDrum/batch transfersTransfer from/pouring from containersPROC9 | Ensure material transfers are under containment or extract ventilation. |
| Production or preparation or articles by tableting, compression, extrusion or pelletisationPROC14 | Provide extraction ventilation at points where emissions occur. |
| Storage.PROC1 | Store substance within a closed system. |

| | |
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| 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. | |

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Section 3.2 -Environment

No exposure assessment presented for the environment.

SECTION 4

GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

Section 4.2 -Environment

No exposure assessment presented for the environment.

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Exposure Scenario - Worker

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|-------------------------|--|
| 300000000286 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Uses in Coatings- Professional |
| Use Descriptor | Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19 Environmental Release Categories: ERC8a, ERC8d |
| 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 |
| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented. | |

| | |
|--|---|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| General exposures (closed systems)PROC1 | No other specific measures identified. |
| General exposures (closed systems)with occasional controlled exposure.PROC2 | No other specific measures identified. |
| Filling/ preparation of equipment from drums or containers.Use in contained systemsPROC2 | Ensure material transfers are under containment or extract ventilation. |

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| Preparation of material for application Use in contained batch processes PROC3 | No other specific measures identified. |
| Film formation - air drying Outdoor PROC4 | Avoid carrying out activities involving exposure for more than 1 hour. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Film formation - air drying Indoor PROC4 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). |
| Preparation of material for application (open systems) Indoor PROC5 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out operation for more than 1 hour. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Preparation of material for application (open systems) Outdoor PROC5 | Wear a respirator conforming to EN140 with Type A filter or better. |
| Material transfers Drum/batch transfers PROC8a PROC8b | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out operation for more than 1 hour. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Roller, spreader, flow application Indoor PROC10 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). |
| Roller, spreader, flow application Outdoor PROC10 | Wear a respirator conforming to EN140 with Type A filter or better. |
| Manual Spraying Indoor PROC11 | Carry out in a vented booth or extracted enclosure. Wear a respirator conforming to EN140 with Type A filter or better. |
| Manual Spraying Outdoor PROC11 | Avoid carrying out activities involving exposure for more than 4 hours Wear a respirator conforming to EN140 with Type A filter or better. |
| Dipping, immersion and pouring Indoor PROC13 | Provide extraction ventilation at points where emissions occur. Avoid manual contact with wet work pieces. |
| Dipping, immersion and pouring Outdoor PROC13 | Avoid manual contact with wet work pieces. |
| Laboratory activities PROC15 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). |

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| Hand application - fingerpaints, pastels, adhesivesIn-doorPROC19 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Wear a respirator conforming to EN140 with Type A filter or better. |
| Hand application - fingerpaints, pastels, adhesivesOut-doorPROC19 | Wear a respirator conforming to EN140 with Type A filter or better. |

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

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

| |
|---|
| Section 3.2 -Environment |
| No exposure assessment presented for the environment. |

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

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

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Exposure Scenario - Worker

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|-------------------------|---|
| 300000000288 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use in Cleaning Agents- Industrial |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC10, PROC13 Environmental Release Categories: ERC4 |
| 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 |
| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes a good basic standard of occupational hygiene is implemented. | |

| | |
|--|---|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| Bulk transfer- sPROC8aPROC8b | Avoid carrying out activities involving exposure for more than 1 hour. |
| Automated process with (semi) closed systems.Use in contained systemsPROC2 | Avoid carrying out activities involving exposure for more than 4 hours |
| Drum/batch transfersUse in contained batch processesPROC3 | Avoid carrying out activities involving exposure for more than 1 hour. , or: |

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| | Wear a respirator conforming to EN140 with Type A filter or better. |
| Application of cleaning products in closed systemsPROC2 | Avoid carrying out activities involving exposure for more than 4 hours |
| Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC8b | Ensure material transfers are under containment or extract ventilation. |
| Use in contained batch processesPROC4 | Provide extraction ventilation at points where emissions occur. |
| Degreasing small objects in cleaning stationPROC13 | Provide extraction ventilation at points where emissions occur. |
| Cleaning with low-pressure washersPROC10 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Cleaning with high pressure washersPROC7 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| ManualSurfacesCleaningno sprayingPROC10 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Storage.PROC1 | 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. | |

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Section 3.2 -Environment

No exposure assessment presented for the environment.

SECTION 4

GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

Section 4.2 -Environment

No exposure assessment presented for the environment.

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Exposure Scenario - Worker

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|-------------------------|---|
| 300000000289 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use in Cleaning Agents- Professional |
| Use Descriptor | Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13 Environmental Release Categories: ERC8a, ERC8b |
| 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 |
| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%, Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes a good basic standard of occupational hygiene is implemented. | |

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|---|--|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC8b | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Automated process with (semi) closed systems.Use in contained systemsPROC2 | Avoid carrying out activities involving exposure for more than 4 hours |

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| Drum/batch transfersUse in contained batch processesPROC3 | Avoid carrying out activities involving exposure for more than 1 hour. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance products)PROC4 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a | Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better. |
| ManualSurfacesCleaningDipping, immersion and pouringPROC13 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Cleaning with low-pressure washers-Rolling, Brushingno sprayingPROC10 | Limit the substance content in the product to 5 %. Provide a good standard of controlled ventilation (10 to 15 air changes per hour). |
| Cleaning with high pressure washers-SprayingIndoorPROC11 | Limit the substance content in the product to 1 %. Provide a good standard of controlled ventilation (10 to 15 air changes per hour). |
| Cleaning with high pressure washers-SprayingOutdoorPROC11 | Limit the substance content in the product to 1 %. Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| ManualSurfacesCleaningSprayingPROC10 | Limit the substance content in the product to 25 %. Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour. , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Ad hoc manual application via trigger sprays, dipping, etc.Rolling, Brush- | Limit the substance content in the product to 25 %. Provide extraction ventilation at points where emis- |

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| ingPROC10 | sions occur. Avoid carrying out operation for more than 4 hours. , or: Wear a respirator conforming to EN140 with Type A filter or better. Wear suitable gloves tested to EN374. |
| Cleaning of medical devicesPROC4 | Provide extraction ventilation at points where emissions occur. Avoid carrying out activities involving exposure for more than 4 hours , or: Wear a respirator conforming to EN140 with Type A filter or better. |
| Storage.PROC1 | Store substance within a closed system. |

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

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

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| Section 3.2 -Environment |
| No exposure assessment presented for the environment. |

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

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

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Exposure Scenario - Worker

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|-------------------------|--|
| 300000000291 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Lubricants- Industrial |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17, PROC18 Environmental Release Categories: ERC4, ERC7 |
| 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. |

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| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes a good basic standard of occupational hygiene is implemented. | |

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| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| General exposures (closed systems)with occasional controlled exposure.PROC1PROC2 | 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 | Transfer via enclosed lines. Use drum pumps or carefully pour from container. |

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| facilityPROC8a | |
| Initial factory fill of equipmentPROC9 | Ensure material transfers are under containment or extract ventilation. |
| Operation and lubrication of high energy open equipmentPROC17PROC18 | Restrict area of openings to equipment. |
| ManualRolling, BrushingPROC10 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). |
| Treatment by dipping and pouringPROC13 | Restrict area of openings to equipment. |
| SprayingPROC7 | Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. |
| Maintenance (of larger plant items) and machine set upDedicated facilityPROC8b | Provide extract ventilation to emission points when contact with warm (>50oC) product is likely. Wear suitable gloves tested to EN374. |
| Maintenance of small itemsNon-dedicated facilityPROC8a | Avoid carrying out activities involving exposure for more than 4 hours |
| Remanufacture of reject articlesPROC9 | Avoid carrying out activities involving exposure for more than 4 hours |
| Storage.PROC1PROC2 | No other specific measures identified. |

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

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

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|---|
| Section 3.2 -Environment |
| No exposure assessment presented for the environment. |

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

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| Section 4.2 -Environment |
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| No exposure assessment presented for the environment. |
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Exposure Scenario - Worker

| | |
|-------------------------|---|
| 300000000292 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Metal working fluids / rolling oils- Industrial |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC17 Environmental Release Categories: ERC4 |
| 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 |
| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes a good basic standard of occupational hygiene is implemented. | |

| | |
|---|--|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| General exposures (closed systems)PROC1PROC2PROC3 | No other specific measures identified. |
| General exposures (open systems)PROC4 | No other specific measures identified. |
| Bulk transfersDedicated facilityPROC8b | Provide enhanced general ventilation by mechanical means. , or: Ensure operation is undertaken outdoors. Avoid carrying out operation for more than 1 hour. |

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| | Clear transfer lines prior to de-coupling. |
| Filling/ preparation of equipment from drums or containers.PROC5PROC8bPROC9 | Use drum pumps or carefully pour from container. |
| Process samplingPROC8b | Use dedicated equipment. |
| Metal machining operationsPROC17 | Provide extraction ventilation at points where emissions occur. Restrict area of openings to equipment. |
| Treatment by dipping and pouringPROC13 | Provide enhanced general ventilation by mechanical means. |
| SprayingPROC7 | Minimise exposure by partial enclosure of the operation or equipment and provide extract ventilation at openings. |
| ManualRolling, BrushingPROC10 | Provide enhanced general ventilation by mechanical means. |
| Automated metal rolling/formingPROC2 | Handle substance within a predominantly closed system provided with extract ventilation. Provide extraction ventilation at points where emissions occur. |
| Semi-automated metal rolling/formingPROC17 | 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 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Drain or remove substance from equipment prior to break-in or maintenance. |
| Storage.PROC1PROC2 | Store substance within a closed system. Transfer via enclosed lines. |

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.

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| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
| Section 4.1 - Health | |
| Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. | |
| Section 4.2 -Environment | |
| No exposure assessment presented for the environment. | |

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Exposure Scenario - Worker

| | |
|-------------------------|---|
| 300000000293 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use in Agrochemicals uses- Professional |
| Use Descriptor | Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13 Environmental Release Categories: ERC8a, ERC8d |
| 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 |
| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes a good basic standard of occupational hygiene is implemented. | |

| | |
|---|---|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| Transfer from/pouring from containersDedicated facilityPROC8b | Ensure operation is undertaken outdoors. |
| Mixing in containers.PROC4 | Ensure operation is undertaken outdoors. |
| Spraying/ fogging by manual applicationPROC11 | Wear a full face respirator conforming to EN140 with Type A filter or better. |
| Spraying/ fogging by machine applicationPROC11 | Apply within a vented cab supplied with filtered air under positive pressure and with a protection factor of >20. |
| Ad hoc manual application via trigger sprays, dipping, | Wear suitable gloves tested to EN374. Wear a respirator conforming to EN140 with Type A filter or |

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| | |
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| etc.PROC13 | better. |
| Equipment cleaning and maintenancePROC8a | Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Avoid carrying out activities involving exposure for more than 1 hour. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

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

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

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|---|
| Section 3.2 -Environment |
| No exposure assessment presented for the environment. |

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

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

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Exposure Scenario - Worker

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|-------------------------|--|
| 300000000304 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use as a fuel- Industrial |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16 Environmental Release Categories: ERC7 |
| 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 |
| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes a good basic standard of occupational hygiene is implemented. | |

| | |
|---|---|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| Bulk transfersDedicated facilityPROC8b | Transfer via enclosed lines. Clear transfer lines prior to de-coupling. |
| Drum/batch transfersDedicated facilityPROC8b | Use drum pumps or carefully pour from container. |
| 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 | Drain down and flush system prior to equipment opening or maintenance. |
| Storage.PROC1PROC2 | Store substance within a closed system. |

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| | Transfer via enclosed lines. Ensure operation is undertaken outdoors. |
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| Section 2.2 | Control of Environmental Exposure |
| No exposure assessment presented for the environment. | |

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

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|---|
| Section 3.2 -Environment |
| No exposure assessment presented for the environment. |

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

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

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Exposure Scenario - Worker

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|-------------------------|---|
| 300000000307 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use as a fuel- Professional |
| Use Descriptor | Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC8a, PROC8b, PROC16 Environmental Release Categories: ERC9a, ERC9b |
| 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. |

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|-------------------------------|--|
| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%., Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes a good basic standard of occupational hygiene is implemented. | |

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|---|---|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| Bulk transfersDedicated facilityPROC8b | Transfer via enclosed lines. Clear transfer lines prior to de-coupling. |
| Drum/batch transfersDedicated facilityPROC8b | Use drum pumps or carefully pour from container. Avoid spillage when withdrawing pump. |
| Refueling.PROC8b | Use drum pumps or carefully pour from container. Avoid spillage when withdrawing pump. |
| General exposures (closed systems)PROC1PROC2PROC3 | No other specific measures identified. |
| Use as a fuel(closed systems)PROC16 | No other specific measures identified. |

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| Equipment cleaning and maintenance PROC8a | Drain down and flush system prior to equipment opening or maintenance. Retain drain downs in sealed storage pending disposal or for subsequent recycle. |
| Storage PROC1 | Store substance within a closed system. |

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

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

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|---|
| Section 3.2 -Environment |
| No exposure assessment presented for the environment. |

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

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

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Exposure Scenario - Worker

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|-------------------------|---|
| 300000000308 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use in laboratories- Industrial |
| Use Descriptor | Sector of Use: SU3 Process Categories: PROC 10, PROC 15 Environmental Release Categories: ERC2, ERC4 |
| Scope of process | Use of the substance within laboratory settings, including material transfers and equipment cleaning. |

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|-------------------------------|--|
| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%. Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes a good basic standard of occupational hygiene is implemented. | |

| | |
|-----------------------------------|---|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| Laboratory activitiesPROC15 | No other specific measures identified. |
| CleaningPROC10 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). |

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

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

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Section 3.2 -Environment

No exposure assessment presented for the environment.

SECTION 4

GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

Section 4.2 -Environment

No exposure assessment presented for the environment.

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Exposure Scenario - Worker

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|-------------------------|---|
| 300000000309 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use in laboratories- Professional |
| Use Descriptor | Sector of Use: SU22 Process Categories: PROC10, PROC15 Environmental Release Categories: ERC8a |
| Scope of process | Use of small quantities within laboratory settings, including material transfers and equipment cleaning. |

| | |
|-------------------------------|--|
| 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 > 10 kPa at STP |
| Concentration of the Substance in Mixture/Article | Covers percentage substance in the product up to 100%, Unless stated otherwise., |
| Frequency and Duration of Use | |
| Covers daily exposures up to 8 hours (unless stated differently). | |
| Other Operational Conditions affecting Exposure | |
| Assumes a good basic standard of occupational hygiene is implemented. | |

| | |
|-----------------------------------|--|
| Contributing Scenarios | Risk Management Measures |
| General measures (eye irritants). | Use suitable eye protection. Avoid direct eye contact with product, also via contamination on hands. |
| Laboratory activitiesPROC15 | No other specific measures identified. |
| CleaningPROC10 | Provide a good standard of controlled ventilation (10 to 15 air changes per hour). Avoid carrying out activities involving exposure for more than 1 hour. |

| | |
|---|--|
| 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. | |

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Section 3.2 -Environment

No exposure assessment presented for the environment.

SECTION 4

GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

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

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

Section 4.2 -Environment

No exposure assessment presented for the environment.

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Exposure Scenario - Consumer

| | |
|-------------------------|--|
| 300000001022 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use as a fuel - Consumer |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC13 Environmental Release Categories: ERC9a, ERC9b |
| Scope of process | Covers consumer uses in liquid fuels. |

| | |
|-------------------------------|--|
| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES |
| Additional Information | No exposure assessment presented for the environment. |

| | |
|---|--|
| Section 2.1 | Control of Consumer Exposure |
| Product Characteristics | |
| Physical form of product | Liquid, vapour pressure > 10 Pa at STP |
| Concentration of the Sub-stance 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): | 0,143 |
| Covers use up to (hours/event): | 2 |
| Other Operational Conditions affecting Exposure | |
| Unless stated otherwise. Covers use at ambient temperatures. Covers use in room size of 20m3 Covers use under typical household ventilation. | |

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

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| | |
|--|---|
| | for each use event 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 |
| | for each use event Covers exposure up to 0,03 hours/event |
| Fuels Liquid, Garden Equipment - Use. | Covers concentrations up to 100 % |
| | covers use up to 26 day/year |
| | Covers use up to 1 times/day of use |
| | For each use event, covers amount up to 750 g |
| | Covers outdoor use. |
| | Covers use in room size of 100 m3 |
| | for each use event Covers exposure up to 2,00 hours/event |
| Fuels Liquid: Garden Equipment - Refuelling. | Covers concentrations up to 100 % |
| | covers use up to 26 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 420,00 cm2 |
| | For each use event, covers amount up to 750 g |
| | Covers use in a one car garage (34 m3) under typical ventilation. |
| | Covers use in room size of 34 m3 |
| | for each use event Covers exposure up to 0,03 hours/event |
| Fuels Liquid: 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 cm3 |
| | For each use event, covers amount up to 100 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 0,01 hours/event |

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 consumer exposures unless otherwise indicated.

Section 3.2 -Environment

No exposure assessment presented for the environment.

SECTION 4

GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

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Section 4.1 - Health

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

Section 4.2 -Environment

No exposure assessment presented for the environment.

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Exposure Scenario - Consumer

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|-------------------------|--|
| 300000001020 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use in Agrochemicals uses - Consumer |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC12, PC27 Environmental Release Categories: ERC8a, ERC8d |
| Scope of process | Covers the consumer use in agrochemicals in liquid and solid forms. |

| | |
|-------------------------------|--|
| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES |
| Additional Information | No exposure assessment presented for the environment. |

| | |
|---|--|
| Section 2.1 | Control of Consumer Exposure |
| Product Characteristics | |
| Physical form of product | Liquid, vapour pressure > 10 Pa at STP |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. |
| | Covers concentration up to (%): 4 % |
| Amounts Used | |
| Unless stated otherwise. | |
| for each use event, covers amount up to (g): | 50 |
| covers skin contact area (cm2): | 857,5 |
| Frequency and Duration of Use | |
| Unless stated otherwise. | |
| covers use up to (times/day of use): | 1 |
| Covers use up to (hours/event): | 0,5 |
| Other Operational Conditions affecting Exposure | |
| Unless stated otherwise. Covers use at ambient temperatures. Covers use in room size of 20m3 Covers use under typical household ventilation. | |

| | |
|---|--|
| Product Categories | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES |
| Fertilizers Lawn and garden preparations. | Covers concentrations up to 4 % |
| | 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 |
| | For each use event, covers amount up to 50 g |
| | Covers use in room size of 20 m3 |

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|---------------------------|---|
| | for each use event Covers exposure up to 0,50 hours/event |
| Plant protection products | Covers concentrations up to 2,5 % |
| | 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, assumes swallowed amount of 0,3 g |
| | For each use event, covers amount up to 50 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 0,50 hours/event |

| | |
|---|--|
| 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 consumer exposures unless otherwise indicated. | |

| |
|---|
| Section 3.2 -Environment |
| No exposure assessment presented for the environment. |

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

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

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Exposure Scenario - Consumer

| | |
|-------------------------|---|
| 300000001018 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Lubricants - Consumer |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC1, PC24, PC31 Environmental Release Categories: ERC8a, ERC8d, ERC9a, ERC9b |
| 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 |
| Additional Information | No exposure assessment presented for the environment. |

| | |
|---|--|
| Section 2.1 | Control of Consumer Exposure |
| Product Characteristics | |
| Physical form of product | Liquid, vapour pressure > 10 Pa at STP |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. |
| | Covers concentration up to (%): 100 % |
| Amounts Used | |
| Unless stated otherwise. | |
| for each use event, covers amount up to (g): | 6.390 |
| covers skin contact area (cm ²): | 468 |
| Frequency and Duration of Use | |
| Unless stated otherwise. | |
| covers use up to (times/day of use): | 1 |
| Covers use up to (hours/event): | 6 |
| Other Operational Conditions affecting Exposure | |
| Unless stated otherwise. Covers use at ambient temperatures. Covers use in room size of 20m ³ 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 (cm ²): 35,73 cm ² |

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|--|---|
| | For each use event, covers amount up to 9 g |
| | Covers use in room size of 20 m ³ |
| | for each use event Covers exposure up to 4,00 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 (cm ²): 110,00 cm ² |
| | For each use event, covers amount up to 6.390 g |
| | Covers use in room size of 20 m ³ |
| | for each use event 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 (cm ²): 35,73 cm ² |
| | For each use event, covers amount up to 85,05 g |
| | Covers use in room size of 20 m ³ |
| | for each use event Covers exposure up to 4,00 hours/event |
| Adhesives, sealants Seal- ants. | Covers concentrations up to 25 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm ²): 35,73 cm ² |
| | For each use event, covers amount up to 75 g |
| | Covers use in room size of 20 m ³ |
| | for each use event Covers exposure up to 1,00 hours/event |
| | Avoid using when windows closed. |
| Lubricants, greases, re- lease products Liquids. | Covers concentrations up to 100 % |
| | covers use up to 4 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm ²): 468 cm ² |
| | For each use event, covers amount up to 2.200 g |
| | Covers use in a one car garage (34 m ³) under typical ventila- tion. |
| | Covers use in room size of 34 m ³ |
| | for each use event Covers exposure up to 0,17 hours/event |
| Lubricants, greases, re- lease 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 (cm ²): 468 cm ² |
| | For each use event, covers amount up to 34 g |
| | Covers use in room size of 20 m ³ |
| Lubricants, greases, re- lease 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 (cm ²): 428,75 cm ² |

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| | |
|--|---|
| | For each use event, covers amount up to 73 g |
| | Covers use in room size of 20 m3 |
| | for each use event 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 in room size of 20 m3 |
| | for each use event Covers exposure up to 1,23 hours/event |
| Polishes and wax blends Polishes, spray (furniture, 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 in room size of 20 m3 |
| | for each use event Covers exposure up to 0,33 hours/event |

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

| | |
|--|----------------------------|
| 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 |
| No exposure assessment presented for the environment. |

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

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

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Exposure Scenario - Consumer

| | |
|-------------------------|---|
| 300000001014 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Uses in Coatings - Consumer |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC1, PC4, PC8 (excipient only), PC9a, PC9b, PC15, PC18, PC23, PC24, PC31, PC34 Environmental Release Categories: ERC8a, ERC8d |
| 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 |
| Additional Information | No exposure assessment presented for the environment. |

| | |
|---|---------------------------------------|
| Section 2.1 | Control of Consumer Exposure |
| Product Characteristics | |
| Physical form of product | Liquid, vapour pressure > 10 Pa |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. |
| | Covers concentration up to (%): 100 % |
| Amounts Used | |
| Unless stated otherwise. | |
| for each use event, covers amount up to (g): | 13.800 |
| covers skin contact area (cm ²): | 857,5 |
| Frequency and Duration of Use | |
| Unless stated otherwise. | |
| covers use up to (times/day of use): | 1 |
| Covers exposure up to (hours/event): | 6 |
| Other Operational Conditions affecting Exposure | |
| Unless stated otherwise. Covers use at ambient temperatures. Covers use in room size of 20m ³ 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 (cm ²): 35,73 cm ² |

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| | For each use event, covers amount up to 9 g |
| | Covers use in room size of 20 m3 |
| | for each use event 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 cm2 |
| | For each use event, covers amount up to 6.390 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 6 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 in room size of 20 m3 |
| | for each use event Covers exposure up to 4 hours/event |
| Adhesives, sealants Seal- ants. | Covers concentrations up to 20 % |
| | 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 in room size of 34 m3 |
| | for each use event Covers exposure up to 1 hours/event |
| Anti-Freeze and de-icing products Washing car win- dow. | Covers concentrations up to 1 % |
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | For each use event, covers amount up to 0,5 g |
| | Covers use in a one car garage (34 m3) under typical ventila- tion. |
| | Covers exposure up to 34 m3 |
| | for each use event Covers exposure up to 0,02 hours/event |
| Anti-Freeze and de-icing products Pouring into radia- tor. | 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 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 |
| | for each use event Covers exposure up to 0,17 hours/event |
| Biocidal products (e.g. Dis- infectants, pest control) | Covers concentrations up to 5 % |

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| (excipient only). | |
| Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners). | covers use up to 128 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,50 cm2 |
| | For each use event, covers amount up to 27 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 0,33 hours/event |
| Biocidal products (e.g. Disinfectants, pest control) (excipient only). | Covers concentrations up to 15 % |
| Cleaners, trigger sprays (all purpose cleaners, sanitary products, glass cleaners). | covers use up to 128 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428 cm2 |
| | For each use event, covers amount up to 35 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 0,17 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 in room size of 20 m3 |
| | for each use event 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 exposure up to 34 m3 |
| | for each use event 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): 857,5 cm2 |
| | For each use event, covers amount up to 491 g |

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|--|---|
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 2 hours/event |
| Fillers, putties, plasters, modelling clay Waterborne latex wall paint. | 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 in room size of 20 m3 |
| | for each use event Covers exposure up to 4 hours/event |
| Fillers, putties, plasters, modelling clay Plasters and floor equalizers. | 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): 857,5 cm2 |
| | For each use event, covers amount up to 13.800 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 2 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 in room size of 20 m3 |
| | for each use event Covers exposure up to 2,2 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 |
| | for each use event Covers exposure up to 0,33 hours/event |
| Non-metal-surface treatment products 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): 857,5 cm2 |
| | For each use event, covers amount up to 491 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 2 hours/event |
| Ink and toners | Covers concentrations up to 10 % |

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|--|---|
| | covers use up to 365 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 71,4 cm2 |
| | For each use event, covers amount up to 40 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 2,2 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 cm2 |
| | For each use event, covers amount up to 56 g |
| | Covers use in room size of 20 m3 |
| | for each use event 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 cm2 |
| | For each use event, covers amount up to 56 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 0,33 hours/event |
| Lubricants, greases, re-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 cm2 |
| | For each use event, covers amount up to 2.200 g |
| | Covers use in a one car garage (34 m3) under typical ventilation. |
| | Covers use in room size of 34 m3 |
| | for each use event Covers exposure up to 0,17 hours/event |
| Lubricants, greases, re-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 cm2 |
| | For each use event, covers amount up to 34 g |
| | Covers use in room size of 20 m3 |
| Lubricants, greases, re-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 in room size of 20 m3 |

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|--|---|
| | for each use event 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 cm2 |
| | For each use event, covers amount up to 142 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 1,23 hours/event |
| Polishes and wax blends Polishes, spray (furniture, 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 cm2 |
| | For each use event, covers amount up to 35 g |
| | Covers use in room size of 20 m3 |
| | for each use event 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): 857,5 cm2 |
| | For each use event, covers amount up to 115 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 1 hours/event |

| | |
|---|--|
| 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 consumer exposures unless otherwise indicated. | |

| |
|---|
| Section 3.2 -Environment |
| No exposure assessment presented for the environment. |

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

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| Section 4.2 -Environment |
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|---|
| No exposure assessment presented for the environment. |
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Exposure Scenario - Consumer

| | |
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| 300000001016 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Use in Cleaning Agents - Consumer |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC9a, PC9b, PC24, PC35 Environmental Release Categories: ERC8a, ERC8d |
| 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. |

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| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES |
| Additional Information | No exposure assessment presented for the environment. |

| | |
|---|--|
| Section 2.1 | Control of Consumer Exposure |
| Product Characteristics | |
| Physical form of product | Liquid, vapour pressure > 10 Pa at STP |
| Concentration of the Substance in Mixture/Article | Unless stated otherwise. |
| | Covers concentration up to (%): 50 % |
| Amounts Used | |
| Unless stated otherwise. | |
| for each use event, covers amount up to (g): | 13.800 |
| covers skin contact area (cm ²): | 857,5 |
| Frequency and Duration of Use | |
| Unless stated otherwise. | |
| covers use up to (times/day of use): | 0,35 |
| Covers use up to (hours/event): | 2,2 |
| Other Operational Conditions affecting Exposure | |
| Unless stated otherwise. Covers use at ambient temperatures. Covers use in room size of 20m ³ Covers use under typical household ventilation. | |

| | |
|--|--|
| Product Categories | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES |
| 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 |

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| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 744 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 2,20 hours/event |
| Coatings and paints, thinners, paint removers Aero-sol spray can. | Covers concentrations up to 50 % |
| | covers use up to 2 day/year |
| | Covers use up to 1 times/day of use |
| | For each use event, covers amount up to 215 g |
| | Covers use in a one car garage (34 m3) under typical ventilation. |
| | Covers exposure up to 34 m3 |
| | for each use event 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): 857,5 cm2 |
| | For each use event, covers amount up to 491 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 2 hours/event |
| Fillers, putties, plasters, modelling clay Plasters and floor equalizers. | 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): 857,5 cm2 |
| | For each use event, covers amount up to 13.800 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 2 hours/event |
| Lubricants, greases, re-release products Liquids. | Covers concentrations up to 50 % |
| | covers use up to 4 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 468 cm2 |
| | For each use event, covers amount up to 2.200 g |
| | Covers use in a one car garage (34 m3) under typical ventilation. |
| | Covers use in room size of 34 m3 |
| | for each use event Covers exposure up to 0,17 hours/event |
| Lubricants, greases, re-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 cm2 |
| | For each use event, covers amount up to 34 g |
| | Covers use in room size of 20 m3 |
| Lubricants, greases, re- | Covers concentrations up to 20 % |

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| | |
|--|---|
| lease products Sprays. | |
| | covers use up to 6 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 428,75 cm2 |
| | For each use event, covers amount up to 73 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 0,17 hours/event |
| Washing and cleaning products (including solvent based products) Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners). | Covers concentrations up to 5 % |
| | covers use up to 128 day/year |
| | Covers use up to 1 times/day of use |
| | covers skin contact area up to (cm2): 857,5 cm2 |
| | For each use event, covers amount up to 27 g |
| | Covers use in room size of 20 m3 |
| | for each use event 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 cm2 |
| | For each use event, covers amount up to 35 g |
| | Covers use in room size of 20 m3 |
| | for each use event Covers exposure up to 0,17 hours/event |

| | |
|---|--|
| 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 consumer exposures unless otherwise indicated. | |

| |
|---|
| Section 3.2 -Environment |
| No exposure assessment presented for the environment. |

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

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| Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. |
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|---------------------------------|
| Section 4.2 -Environment |
|---------------------------------|

| |
|---|
| No exposure assessment presented for the environment. |
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Exposure Scenario - Consumer

| | |
|-------------------------|---|
| 300000010695 | |
| SECTION 1 | EXPOSURE SCENARIO TITLE |
| Title | Other Consumer Uses - Consumer |
| Use Descriptor | Sector of Use: SU21 Product Categories: PC28, PC39 Environmental Release Categories: ERC8a, ERC8d |
| Scope of process | Consumer uses e.g. as a carrier in cosmetics/personal care products, perfumes and fragrances. Note: For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation. |

| | |
|-------------------------------|---|
| SECTION 2 | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES |
| Additional Information | No exposure assessment presented for human health. No exposure assessment presented for the environment. |

| | |
|--------------------------------|-------------------------------------|
| Section 2.1 | Control of Consumer Exposure |
| Product Characteristics | |

| | |
|---------------------------|--|
| Product Categories | OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES |
|---------------------------|--|

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

| | |
|--|----------------------------|
| SECTION 3 | EXPOSURE ESTIMATION |
| Section 3.1 - Health | |
| No exposure assessment presented for human health. | |

| | |
|---|--|
| Section 3.2 -Environment | |
| No exposure assessment presented for the environment. | |

| | |
|--|--|
| SECTION 4 | GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO |
| Section 4.1 - Health | |
| No exposure assessment presented for human health. | |

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

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