1. Product identifiers
   Product name: 1-Methoxy-2-propanol EMPLURA®

2. Relevant identified uses of the substance or mixture and uses advised against
   Identified uses: Chemical production, Solvent

3. Details of the supplier of the safety data sheet
   Company: Merck Life Science UK Limited
   New Road
   The Old Brickyard
   GILLINGHAM
   Dorset
   SP8 4XT
   UNITED KINGDOM

   Telephone: +44 (0)1747 833-000
   Fax: +44 (0)1747 833-313
   E-mail address: TechnicalService@merckgroup.com

4. Emergency telephone
   Emergency Phone #: +44 (0)870 8200418 (CHEMTREC)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification according to Regulation (EC) No 1272/2008
   Flammable liquids (Category 3), H226
   Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

   For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements
   Labelling according to Regulation (EC) No 1272/2008
Pictogram

Signal word  Warning

Hazard statement(s)
H226  Flammable liquid and vapor.
H336  May cause drowsiness or dizziness.

Precautionary statement(s)
P210  Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233  Keep container tightly closed.
P240  Ground and bond container and receiving equipment.
P241  Use explosion-proof electrical/ventilating/lighting/equipment.
P242  Use non-sparking tools.
P243  Take action to prevent static discharges.

Supplemental Hazard Statements  none

**Reduced Labeling (<= 125 ml)**

Pictogram

Signal word  Warning

Hazard statement(s)  none

Precautionary statement(s)  none

Supplemental Hazard Statements  none

### 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### SECTION 3: Composition/information on ingredients

#### 3.1 Substances

<table>
<thead>
<tr>
<th>Component</th>
<th>Classification</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1-methoxy-2-propanol</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>107-98-2</td>
<td></td>
</tr>
<tr>
<td>EC-No.</td>
<td>203-539-1</td>
<td></td>
</tr>
<tr>
<td>Index-No.</td>
<td>603-064-00-3</td>
<td></td>
</tr>
<tr>
<td>Flam. Liq. 3; STOT SE 3; H226, H336</td>
<td>&lt;= 100 %</td>
<td></td>
</tr>
</tbody>
</table>

| **2-methoxy-1-propanol**   |                |               |
| CAS-No.                    | 1589-47-5      |               |
| EC-No.                     | 216-455-5      |               |
| Flam. Liq. 3; Skin Irrit. 2; Eye Dam. 1; Repr. 1B; | >= 0.1 - < 0.3 % |
SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air. Call in physician.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/shower.

In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed
After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air at elevated temperatures.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
In the event of fire, wear self-contained breathing apparatus.

5.4 Further information
Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb® ). Dispose of properly. Clean up affected area.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Advice on safe handling
Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures
Change contaminated clothing. Wash hands after working with substance.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Protected from light. Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.
Recommended storage temperature see product label.

Storage class
Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Component</th>
<th>CAS-No.</th>
<th>Value</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-methoxy-2-propanol</td>
<td>107-98-2</td>
<td>TWA</td>
<td>100 ppm 375 mg/m³</td>
<td>Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values</td>
</tr>
</tbody>
</table>

Remarks: Identifies the possibility of significant uptake through the skin.
<table>
<thead>
<tr>
<th>Indicative STEL</th>
<th>150 ppm 568 mg/m³</th>
<th>Europe. Commission Directive 2000/39/EC establishing a first list of indicative occupational exposure limit values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifies the possibility of significant uptake through the skin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicative TWA</th>
<th>100 ppm 375 mg/m³</th>
<th>UK. EH40 WEL - Workplace Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Indicative STEL</th>
<th>150 ppm 560 mg/m³</th>
<th>UK. EH40 WEL - Workplace Exposure Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Predicted No Effect Concentration (PNEC)**

<table>
<thead>
<tr>
<th>Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fresh water</td>
<td>10 mg/l</td>
</tr>
<tr>
<td>Sea water</td>
<td>1 mg/l</td>
</tr>
<tr>
<td>Aquatic intermittent release</td>
<td>100 mg/l</td>
</tr>
<tr>
<td>Sewage treatment plant</td>
<td>100 mg/l</td>
</tr>
<tr>
<td>Fresh water sediment</td>
<td>41.6 mg/kg</td>
</tr>
<tr>
<td>Soil</td>
<td>2.47 mg/kg</td>
</tr>
<tr>
<td>Sea sediment</td>
<td>4.17 mg/kg</td>
</tr>
</tbody>
</table>

### 8.2 Exposure controls

**Personal protective equipment**

**Eye/face protection**

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

**Skin protection**

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact
- Material: butyl-rubber
- Minimum layer thickness: 0.7 mm
- Break through time: 480 min
- Material tested:Butoject® (KCL 898)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).
Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 120 min
Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

**Body Protection**  
Flame retardant antistatic protective clothing.

**Respiratory protection**  
Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

**Control of environmental exposure**  
Do not let product enter drains. Risk of explosion.

---

**SECTION 9: Physical and chemical properties**

*9.1 Information on basic physical and chemical properties*

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a)</strong> Appearance</td>
<td>Form: liquid</td>
</tr>
<tr>
<td></td>
<td>Color: colorless</td>
</tr>
<tr>
<td><strong>b)</strong> Odor</td>
<td>ethanolic</td>
</tr>
<tr>
<td><strong>c)</strong> Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td><strong>d)</strong> pH</td>
<td>No data available</td>
</tr>
<tr>
<td><strong>e)</strong> Melting point/freezing point</td>
<td>Melting point: -96 °C at 1,013 hPa - (ECHA)</td>
</tr>
<tr>
<td><strong>f)</strong> Initial boiling point and boiling range</td>
<td>118 - 119 °C at 1,013 hPa</td>
</tr>
<tr>
<td><strong>g)</strong> Flash point</td>
<td>34 °C - closed cup</td>
</tr>
<tr>
<td><strong>h)</strong> Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td><strong>i)</strong> Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td><strong>j)</strong> Upper/lower flammability or explosive limits</td>
<td>Upper explosion limit: 16 % (V)</td>
</tr>
<tr>
<td></td>
<td>Lower explosion limit: 1.8 % (V)</td>
</tr>
<tr>
<td><strong>k)</strong> Vapor pressure</td>
<td>14.53 hPa at 25 °C</td>
</tr>
<tr>
<td><strong>l)</strong> Vapor density</td>
<td>3.11 - (Air = 1.0)</td>
</tr>
<tr>
<td><strong>m)</strong> Density</td>
<td>0.921 g/cm³ at 25 °C - DIN 51757</td>
</tr>
<tr>
<td></td>
<td>Relative density</td>
</tr>
<tr>
<td><strong>n)</strong> Water solubility</td>
<td>1,000 g/l at 20 °C - Regulation (EC) No. 440/2008, Annex, A.6-completely miscible</td>
</tr>
<tr>
<td><strong>o)</strong> Partition coefficient: n-octanol/water</td>
<td>Pow: &lt; 1 at 20 °C - Bioaccumulation is not expected.</td>
</tr>
<tr>
<td><strong>p)</strong> Autoignition</td>
<td>No data available</td>
</tr>
</tbody>
</table>
temperature
q) Decomposition temperature No data available

r) Viscosity Viscosity, kinematic: No data available
Viscosity, dynamic: 1.7 mPa.s at 25 °C

s) Explosive properties No data available

t) Oxidizing properties none

9.2 Other safety information
Surface tension 70.7 mN/m at 1g/l at 20 °C
- OECD Test Guideline 115
Relative vapor density 3.11 - (Air = 1.0)

SECTION 10: Stability and reactivity

10.1 Reactivity
Can violently decompose at elevated temperatures Stable under recommended storage conditions.
Vapor/air-mixtures are explosive at intense warming.

10.2 Chemical stability
Sensitive to air.
The product is chemically stable under standard ambient conditions (room temperature).

10.3 Possibility of hazardous reactions
Violent reactions possible with:
Strong oxidizing agents
acid halides
Acid anhydrides
Acid chlorides
Generates dangerous gases or fumes in contact with:
hydrides

10.4 Conditions to avoid
May form explosive peroxides.
Heating.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Peroxides
In the event of fire: see section 5
SECTION 11: Toxicological information

11.1 Information on toxicological effects

**Acute toxicity**
LD50 Oral - Rat - male and female - 4,016 mg/kg
(EC Directive 92/69/EEC B.1 Acute Toxicity (Oral))
Symptoms: Nausea, Vomiting, Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.
LC50 Inhalation - Rat - 4 h - > 6 mg/l - aerosol

Remarks: (IUCLID)
Inhalation: Irritating to respiratory system.
LD50 Dermal - Rat - male and female - > 2,000 mg/kg

**Skin corrosion/irritation**
Skin - Rabbit
Result: No skin irritation - 4 h

**Serious eye damage/eye irritation**
Eyes - Rabbit
Result: No eye irritation
(Regulation (EC) No. 440/2008, Annex, B.5)

**Respiratory or skin sensitization**
Maximization Test - Guinea pig
Result: negative

**Germ cell mutagenicity**
Test Type: Ames test
Test system: *Salmonella typhimurium*
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: Chinese hamster lung cells
Metabolic activation: without metabolic activation
Method: OECD Test Guideline 476
Result: negative
Test Type: Chromosome aberration test in vitro
Test system: Chinese hamster ovary cells
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 473
Result: negative

Test Type: Micronucleus test
Species: Mouse
Cell type: Bone marrow
Application Route: Intraperitoneal
Method: OECD Test Guideline 474
Result: negative

**Carcinogenicity**
No data available

**Reproductive toxicity**
Specific target organ toxicity - single exposure
May cause drowsiness or dizziness. - Central nervous system
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Additional Information
Endocrine disrupting properties

Product: 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.

Repeated dose toxicity - Rabbit - male and female - Dermal - 21 Days - NOAEL (No observed adverse effect level) - > 1,000 mg/kg

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.
After absorption of toxic quantities:

CNS disorders
narcosis

Toxic effect on:
Liver
Kidney

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish
static test LC50 - Leuciscus idus (Golden orfe) - 6,812 mg/l - 96 h (DIN 38412 part 15)

Toxicity to daphnia and other aquatic invertebrates
static test LC50 - Daphnia magna (Water flea) - 23,300 mg/l - 48 h Remarks: (ECHA)

Toxicity to algae
static test ErC50 - Pseudokirchneriella subcapitata (green algae) - > 1,000 mg/l - 7 d Remarks: (ECHA)
12.2 Persistence and degradability
Biodegradability  aerobic Dissolved organic carbon (DOC) - Exposure time 28 d
Result: 96 % - Readily biodegradable.
(OECD Test Guideline 301E)

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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

12.7 Other adverse effects
No data available

SECTION 13: Disposal considerations
13.1 Waste treatment methods
Product
Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions. Notice Directive on waste 2008/98/EC.

SECTION 14: Transport information
14.1 UN number
ADR/RID: 3092  IMDG: 3092  IATA: 3092

14.2 UN proper shipping name
ADR/RID: 1-METHOXY-2-PROPanOL
IMDG: 1-METHOXY-2-PROPanOL
IATA: 1-Methoxy-2-propanol

14.3 Transport hazard class(es)
ADR/RID: 3  IMDG: 3  IATA: 3

14.4 Packaging group
ADR/RID: III  IMDG: III  IATA: III

14.5 Environmental hazards
ADR/RID: no  IMDG Marine pollutant: no  IATA: no
14.6 Special precautions for user
No data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

National legislation

Other regulations
Take note of Dir 94/33/EC on the protection of young people at work.

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

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

- H226 Flammable liquid and vapor.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H335 May cause respiratory irritation.
- H336 May cause drowsiness or dizziness.
- H360D May damage the unborn child.

Further information
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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### Annex: Exposure scenario

#### Identified uses:

**Use: Industrial use**

| SU 3 | Industrial uses: Uses of substances as such or in preparations at industrial sites |
| SU 3, SU 9, SU 10 | Industrial uses: Uses of substances as such or in preparations at industrial sites, Manufacture of fine chemicals, Formulation [mixing] of preparations and/or re-packaging (excluding alloys) |
| PC19 | Intermediate |
| PC21 | Laboratory chemicals |
| PROC1 | Use in closed process, no likelihood of exposure |
| PROC2 | Use in closed, continuous process with occasional controlled exposure |
| PROC3 | Use in closed batch process (synthesis or formulation) |
| PROC4 | Use in batch and other process (synthesis) where opportunity for exposure arises |
| PROC5 | Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) |
| PROC8a | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities |
| PROC8b | Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities |
| PROC9 | Transfer of substance or preparation into small containers (dedicated filling line, including weighing) |
| PROC10 | Roller application or brushing |
| PROC15 | Use as laboratory reagent |
| ERC2, ERC4, ERC6a | Formulation of preparations, Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use resulting in manufacture of another substance (use of intermediates) |

**Use: Professional use**

| SU 22 | Professional uses: Public domain (administration, education, entertainment, services, craftsmen) |
| SU 22 | Professional uses: Public domain (administration, education, entertainment, services, craftsmen) |
| PC21 | Laboratory chemicals |
| PROC15 | Use as laboratory reagent |
| ERC2, ERC6a | Formulation of preparations, Industrial use resulting in manufacture of another substance (use of intermediates) |

---

1. **Short title of Exposure Scenario: Industrial use**

   - **Main User Groups**: SU 3
   - **Sectors of end-use**: SU 3, SU 9, SU 10
   - **Chemical product category**: PC19, PC21
   - **Process categories**: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC15
   - **Environmental Release Categories**: ERC2, ERC4, ERC6a:
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15

**Product characteristics**
- Concentration of the Substance in Mixture/Article: Covers the percentage of the substance in the product up to 100% (unless stated differently).
- Physical Form (at time of use): Medium volatile liquid
- Process Temperature: < 20 °C

**Frequency and duration of use**
- Frequency of use: 8 hours/day
- Frequency of use: 5 days/week

**Other operational conditions affecting workers exposure**
- Outdoor / Indoor: Indoor without local exhaust ventilation (LEV)

2.2 Contributing scenario controlling worker exposure for: PROC10

**Product characteristics**
- Concentration of the Substance in Mixture/Article: Covers the percentage of the substance in the product up to 100% (unless stated differently).
- Physical Form (at time of use): Medium volatile liquid
- Process Temperature: < 20 °C

**Frequency and duration of use**
- Frequency of use: 8 hours/day
- Frequency of use: 5 days/week

**Other operational conditions affecting workers exposure**
- Outdoor / Indoor: Indoor without local exhaust ventilation (LEV)

**Conditions and measures related to personal protection, hygiene and health evaluation**
Wear suitable gloves tested to EN374.

3. Exposure estimation and reference to its source

**Environment**
A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

**Workers**

<table>
<thead>
<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value</th>
<th>Level of Exposure</th>
<th>RCR*</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROC1</td>
<td>ECETOC TRA</td>
<td>longterm, inhalative, systemic</td>
<td>&lt; 0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROC1</td>
<td>ECETOC TRA</td>
<td>longterm, dermal, systemic</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROC1</td>
<td></td>
<td>longterm, combined,</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROC</td>
<td>ECETOC TRA</td>
<td>Inhalation Form</td>
<td>Value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>------------</td>
<td>-----------------</td>
<td>------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROC2</td>
<td>ECETOC TRA</td>
<td>longterm, inhalative, systemic</td>
<td>&lt; 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROC2</td>
<td>ECETOC TRA</td>
<td>longterm, dermal, systemic</td>
<td>&lt; 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROC2</td>
<td></td>
<td>longterm, combined, systemic</td>
<td>&lt; 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROC3</td>
<td>ECETOC TRA</td>
<td>longterm, inhalative, systemic</td>
<td>0.24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROC3</td>
<td>ECETOC TRA</td>
<td>longterm, dermal, systemic</td>
<td>0.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROC3</td>
<td></td>
<td>longterm, combined, systemic</td>
<td>0.25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PROC4</td>
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1. Short title of Exposure Scenario: Professional use

Main User Groups : SU 22
Sectors of end-use : SU 22
Chemical product category : PC21
Process categories : PROC15
Environmental Release Categories : ERC2, ERC6a:

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

For scaling of worker exposure assessments performed with ECETOC TRA, please consult the Merck tool ScIDeEx® at www.merckmillipore.com/scideex. Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).
2.2 Contributing scenario controlling worker exposure for: PROC15

**Product characteristics**
Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Medium volatile liquid
Process Temperature : < 20 °C

**Frequency and duration of use**
Frequency of use : 8 hours/day
Frequency of use : 5 days/week

**Other operational conditions affecting workers exposure**
Outdoor / Indoor : Indoor without local exhaust ventilation (LEV)

3. Exposure estimation and reference to its source

**Environment**
A chemical safety assessment was performed according REACH Article 14(3), Annex I, sections 3 (Environmental Hazard assessment) and 4 (PBT/vPvB Assessment). As no hazard was identified, an exposure assessment and risk characterisation is not necessary (REACH Annex I section 5.0).

**Workers**

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<tr>
<th>Contributing Scenario</th>
<th>Exposure Assessment Method</th>
<th>Specific conditions</th>
<th>Value</th>
<th>Level of Exposure</th>
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*Risk characterisation ratio

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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