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

1.1 Product identifiers

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

Product Number: 1.16738
Catalogue No.: 116738
Brand: Millipore
Index-No.: 603-064-00-3
REACH No.: A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

CAS-No.: 107-98-2

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

Identified uses: Chemical production, Solvent

1.3 Details of the supplier of the safety data sheet

Company: Merck Pty Ltd.
259 Davidson Road, Corner Peddie Road
WADEVILLE, GERMISTON
1428
SOUTH AFRICA

Telephone: +27 (0) 8600 63725
Fax: +27 (0) 860 522 329

1.4 Emergency telephone

Emergency Phone #: 0-800-983-611 (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 Regulation (EC) No 1272/2008
The life science business of Merck operates as MilliporeSigma in the US and Canada.

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>1-methoxy-2-propanol</td>
<td>Flam. Liq. 3; STOT SE 3; H226, H336</td>
<td>&lt;= 100 %</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>2-methoxy-1-propanol</td>
<td>Flam. Liq. 3; Skin Irrit. 2;</td>
<td>&gt;= 0.1 - &lt;</td>
</tr>
<tr>
<td>CAS-No.</td>
<td>1589-47-5</td>
<td></td>
</tr>
</tbody>
</table>
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
Ingredients with workplace control parameters

<table>
<thead>
<tr>
<th>Compartiment</th>
<th>Predicted No Effect Concentration (PNEC)</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>
</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>Material</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<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>

---

The life science business of Merck operates as MilliporeSigma in the US and Canada
<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>c) Odor Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>d) pH</td>
<td>No data available</td>
</tr>
<tr>
<td>e) Melting point/freezing point</td>
<td>Melting point: -96 °C at 1.013 hPa - (ECHA)</td>
</tr>
<tr>
<td>f) Initial boiling point and boiling range</td>
<td>118 - 119 °C at 1.013 hPa</td>
</tr>
<tr>
<td>g) Flash point</td>
<td>34 °C - closed cup</td>
</tr>
<tr>
<td>h) Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>i) Flammability (solid, gas)</td>
<td>No data available</td>
</tr>
<tr>
<td>j) 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>k) Vapor pressure</td>
<td>14,53 hPa at 25 °C</td>
</tr>
<tr>
<td>l) Vapor density</td>
<td>3,11 - (Air = 1.0)</td>
</tr>
<tr>
<td>m) Density</td>
<td>0,921 g/cm³ at 25 °C - DIN 51757</td>
</tr>
<tr>
<td></td>
<td>Relative density</td>
</tr>
<tr>
<td>n) 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>o) Partition coefficient: n-octanol/water</td>
<td>Pow: &lt; 1 at 20 °C - Bioaccumulation is not expected.</td>
</tr>
<tr>
<td>p) Autoignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>q) Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>r) Viscosity</td>
<td>Viscosity, kinematic: No data available</td>
</tr>
<tr>
<td></td>
<td>Viscosity, dynamic: 1,7 mPa.s at 25 °C</td>
</tr>
<tr>
<td>s) Explosive properties</td>
<td>No data available</td>
</tr>
<tr>
<td>t) Oxidizing properties</td>
<td>none</td>
</tr>
</tbody>
</table>

**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
No data available

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:
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.

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**
See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

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.
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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