

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.0 Revision Date 08.02.2013

Print Date 26.04.2013

GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifiers**

Product name : Methanol

Product Number : 65550

Brand : Fluka

Index-No. : 603-001-00-X

REACH No. : 01-2119433307-44-XXXX

CAS-No. : 67-56-1

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

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Chemie GmbH
Industriestrasse 25
CH-9471 BUCHS

Telephone : +41 81-755-2511

Fax : +41 81-756-5449

E-mail address : eurtechserv@sial.com

1.4 Emergency telephone number

Emergency Phone # : +41 81-755-2255
145(CH)
+41 44-251-5151 (Tox-Zentrum)

SECTION 2: Hazards identification**2.1 Classification of the substance or mixture****Classification according to Regulation (EC) No 1272/2008**

Flammable liquids (Category 2), H225
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311
Acute toxicity, Oral (Category 3), H301
Specific target organ toxicity - single exposure (Category 1), H370

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

Classification according to EU Directives 67/548/EEC or 1999/45/EC

F Highly flammable R11
T Toxic R23/24/25, R39/23/24/25

For the full text of the R-phrases mentioned in this Section, see Section 16.

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

Pictogram



Signal word Danger

Hazard statement(s)
H225

Highly flammable liquid and vapour.

| | |
|--------------------------------|--|
| H301 | Toxic if swallowed. |
| H311 | Toxic in contact with skin. |
| H331 | Toxic if inhaled. |
| H370 | Causes damage to organs. |
| Precautionary statement(s) | |
| P210 | Keep away from heat/sparks/open flames/hot surfaces. - No smoking. |
| P260 | Do not breathe dust/ fume/ gas/ mist/ vapours/ spray. |
| P280 | Wear protective gloves/ protective clothing. |
| P301 + P310 | IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. |
| P311 | Call a POISON CENTER or doctor/ physician. |
| Supplemental Hazard Statements | none |

2.3 Other hazards

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on ingredients

3.1 Substances

| | | |
|---------------------|---|-----------------------|
| Synonyms | : | Methyl alcohol |
| Formula | : | CH ₄ O |
| Molecular Weight | : | 32,04 g/mol |
| CAS-No. | : | 67-56-1 |
| EC-No. | : | 200-659-6 |
| Index-No. | : | 603-001-00-X |
| Registration number | : | 01-2119433307-44-XXXX |

Hazardous ingredients according to Regulation (EC) No 1272/2008

| Component | Classification | Concentration |
|-----------------|---|---------------|
| Methanol | | |
| | Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301 + H311 + H331, H370 | - |

Hazardous ingredients according to Directive 1999/45/EC

| Component | Classification | Concentration |
|-----------------|--------------------------------------|---------------|
| Methanol | | |
| | F, T, R11 - R23/24/25 - R39/23/24/25 | - |

For the full text of the H-Statements and R-Phrases mentioned in this Section, see Section 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. 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**

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

5.3 Advice for firefighters

Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

A part from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Components with workplace control parameters

Derived No Effect Level (DNEL)

| Application Area | Exposure routes | Health effect | Value |
|------------------|-----------------|----------------------------|-----------------------|
| Workers | Inhalation | Acute local effects | 260 mg/m ³ |
| Workers | Inhalation | Acute systemic effects | 260 mg/m ³ |
| Workers | Skin contact | Long-term systemic effects | 40mg/kg BW/d |
| Workers | Inhalation | Long-term systemic effects | 260 mg/m ³ |
| Workers | Inhalation | Long-term local effects | 260 mg/m ³ |
| Consumers | Skin contact | Acute local effects | 8mg/kg BW/d |
| Consumers | Inhalation | Acute local effects | 50 mg/m ³ |
| Consumers | Ingestion | Acute local effects | 8mg/kg BW/d |
| Consumers | Inhalation | Acute systemic effects | 50 mg/m ³ |
| Consumers | Skin contact | Long-term systemic effects | 8mg/kg BW/d |
| Consumers | Inhalation | Long-term systemic effects | 50 mg/m ³ |
| Consumers | Ingestion | Long-term systemic effects | 8mg/kg BW/d |
| Consumers | Inhalation | Long-term local effects | 50 mg/m ³ |
| Workers | Skin contact | Acute local effects | 40mg/kg BW/d |

Predicted No Effect Concentration (PNEC)

| Compartment | Value |
|-------------------------------|-------------|
| Soil | 23,5 mg/kg |
| Marine water | 15,4 mg/l |
| Fresh water | 154 mg/l |
| Fresh water sediment | 570,4 mg/kg |
| Onsite sewage treatment plant | 100 mg/kg |

8.2 Exposure controls

Appropriate engineering controls

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection

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

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact

Material: butyl-rubber

Minimum layer thickness: 0,3 mm

Break through time: 480 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0,4 mm

Break through time: 31 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|---|---|
| a) Appearance | Form: liquid Colour: colourless |
| b) Odour | pungent |
| c) Odour Threshold | no data available |
| d) pH | no data available |
| e) Melting point/freezing point | Melting point/range: -98 °C |
| f) Initial boiling point and boiling range | 64,7 °C |
| g) Flash point | 9,7 °C - closed cup |
| h) Evaporation rate | no data available |
| i) Flammability (solid, gas) | no data available |
| j) Upper/lower flammability or explosive limits | Upper explosion limit: 36 %(V) Lower explosion limit: 6 %(V) |
| k) Vapour pressure | 130,3 hPa at 20,0 °C 546,6 hPa at 50,0 °C 169,27 hPa at 25,0 °C |
| l) Vapour density | 1,11 |
| m) Relative density | 0,791 g/mL at 25 °C 0,791 g/mL at 20 °C |
| n) Water solubility | completely miscible |
| o) Partition coefficient: n-octanol/water | log Pow: -0,77 |
| p) Auto-ignition temperature | 455,0 °C at 1.013 hPa |
| q) Decomposition temperature | no data available |

- r) Viscosity no data available
s) Explosive properties Not explosive
t) Oxidizing properties The substance or mixture is not classified as oxidizing.

9.2 Other safety information

- Minimum ignition energy 0,14 mJ
Conductivity < 1 µS/cm
Relative vapour density 1,11

SECTION 10: Stability and reactivity

10.1 Reactivity

no data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

no data available

10.4 Conditions to avoid

Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 Incompatible materials

Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids

10.6 Hazardous decomposition products

Other decomposition products - no data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LDLO Oral - Human - 143 mg/kg

Remarks: Lungs, Thorax, or Respiration:Dyspnea. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhoea.

LD50 Oral - rat - 1.187 - 2.769 mg/kg

LC50 Inhalation - rat - 4 h - 128,2 mg/l

LC50 Inhalation - rat - 6 h - 87,6 mg/l

LD50 Dermal - rabbit - 17.100 mg/kg

Skin corrosion/irritation

Skin - rabbit

Result: No skin irritation

Serious eye damage/eye irritation

Eyes - rabbit

Result: No eye irritation

Respiratory or skin sensitisation

Maximisation Test - guinea pig

Does not cause skin sensitisation.

(OECD Test Guideline 406)

Germ cell mutagenicity

Ames test

S. typhimurium

Result: negative

in vitro assay
fibroblast
Result: negative
Mutation in mammalian somatic cells.

Mutagenicity (in vivo mammalian bone-marrow cytogenetic test, chromosomal analysis)
mouse - male and female
Result: negative

Carcinogenicity

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Reproductive toxicity

Damage to fetus not classifiable

Fertility classification not possible from current data.

Specific target organ toxicity - single exposure

Causes damage to organs.

Specific target organ toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

No aspiration toxicity classification

Additional Information

RTECS: PC1400000

Methyl alcohol may be fatal or cause blindness if swallowed.

Effects due to ingestion may include:, Headache, Dizziness, Drowsiness, metabolic acidosis, Coma, Seizures.

Symptoms may be delayed., Damage of the:, Liver, Kidney

Central nervous system - Breathing difficulties - Based on Human Evidence

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish mortality LC50 - Lepomis macrochirus (Bluegill) - 15.400,0 mg/l - 96 h

NOEC - Oryzias latipes - 7.900 mg/l - 200 h

Toxicity to daphnia and other aquatic invertebrates EC50 - Daphnia magna (Water flea) - > 10.000,00 mg/l - 48 h

Toxicity to algae Growth inhibition EC50 - Scenedesmus capricornutum (fresh water algae) - 22.000,0 mg/l - 96 h

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 5 d
Result: 72 % - rapidly biodegradable

Biochemical Oxygen Demand (BOD) 600 - 1.120 mg/g

Chemical Oxygen Demand (COD) 1.420 mg/g

Theoretical oxygen demand 1.500 mg/g

12.3 Bioaccumulative potential

Bioaccumulation Cyprinus carpio (Carp) - 72 d
at 20 °C - 5 mg/l

Bioconcentration factor (BCF): 1,0

12.4 Mobility in soil

Will not adsorb on soil.

12.5 Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

12.6 Other adverse effects

Additional ecological information Avoid release to the environment.

Stability in water at 19 °C83 - 91 % - 72 h
Remarks: Hydrolyses on contact with water.Hydrolyses readily.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 1230 IMDG: 1230 IATA: 1230

14.2 UN proper shipping name

ADR/RID: METHANOL
IMDG: METHANOL
IATA: Methanol

14.3 Transport hazard class(es)

ADR/RID: 3 (6.1) IMDG: 3 (6.1) IATA: 3 (6.1)

14.4 Packaging group

ADR/RID: II IMDG: II IATA: II

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

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

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

no data available

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.

| | |
|---------------|--|
| Acute Tox. | Acute toxicity |
| Flam. Liq. | Flammable liquids |
| H225 | Highly flammable liquid and vapour. |
| H301 | Toxic if swallowed. |
| H301 + H311 + | Toxic if swallowed, in contact with skin or if inhaled |

| | |
|------|-----------------------------|
| H331 | |
| H311 | Toxic in contact with skin. |
| H331 | Toxic if inhaled. |
| H370 | Causes damage to organs. |

Full text of R-phrases referred to under sections 2 and 3

| | |
|--------------|---|
| F | Highly flammable |
| T | Toxic |
| R11 | Highly flammable. |
| R23/24/25 | Toxic by inhalation, in contact with skin and if swallowed. |
| R39/23/24/25 | Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. |

Further information

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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.

Annex: Exposure scenario

Identified uses:

Use: Used as chemical intermediate

| |
|---|
| SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites |
| SU 3, SU9: Industrial uses: Uses of substances as such or in preparations at industrial sites, Manufacture of fine chemicals |
| PC19: Intermediate |
| 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 PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC15: Use as laboratory reagent |
| ERC1, ERC4, ERC6a: Manufacture of substances, 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: Formulation of preparations

| |
|--|
| SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites |
| SU 10: Formulation [mixing] of preparations and/ or re-packaging (excluding alloys) |
| 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 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) PROC15: Use as laboratory reagent |
| ERC2: Formulation of preparations |

Use: Industrial use of processing aids in processes and products, not becoming part of articles

| |
|---|
| SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites |
| SU 3, SU9: Industrial uses: Uses of substances as such or in preparations at industrial sites, Manufacture of fine chemicals |
| PC20: Products such as ph-regulators, flocculants, pre-cipitants, neutralization agents 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 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 |
| ERC4, ERC6b: Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use of reactive processing aids |

Use: Used as laboratory reagent.

| |
|---|
| SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen) |
| SU 3, SU 22, SU24: Industrial uses: Uses of substances as such or in preparations at industrial sites, Professional uses: Public domain (administration, education, entertainment, services, craftsmen), Scientific research and development |
| PC19: Intermediate PC20: Products such as ph-regulators, flocculants, pre-cipitants, neutralization agents PC21: Laboratory chemicals |

| |
|--|
| PROC10: Roller application or brushing |
| PROC15: Use as laboratory reagent |
| ERC4, ERC6a, ERC6b: 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), Industrial use of reactive processing aids |

1. Short title of Exposure Scenario: Used as chemical intermediate

| | |
|----------------------------------|--|
| Main User Groups | : SU 3 |
| Sectors of end-use | : SU 3, SU9 |
| Chemical product category | : PC19 |
| Process categories | : PROC1, PROC2, PROC3, PROC4, PROC8b, PROC15 |
| Environmental Release Categories | : ERC1, ERC4, ERC6a: |

2. Exposure scenario

2.1 Contributing scenario controlling environmental exposure for: ERC1, ERC4, ERC6a

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8b, PROC15, PC19

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) : High volatile liquid

Frequency and duration of use

Application duration : > 4 h

Frequency of use : 220 days/year

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Good work practice required., Use only in area provided with appropriate exhaust ventilation.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374., For personal protection see section 8.

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

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|-----------------------|----------------------------|--------------------------------|------------|-------------------|-------|
| PROC1 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 0,01 mg/m3 | 0 |
| PROC1 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0,34 mg/kg BW/d | 0,009 |

| | | | | | |
|--------|------------|--------------------------------|------------|------------------|-------|
| PROC2 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 6,67 mg/m3 | 0,026 |
| PROC2 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 13,33 mg/kg BW/d | 0,333 |
| PROC3 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0,34 mg/kg BW/d | 0,009 |
| PROC3 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 13,33 mg/m3 | 0,051 |
| PROC4 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 6,86 mg/kg BW/d | 0,172 |
| PROC4 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 13,33 mg/m3 | 0,051 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 6 mg/m3 | 0,023 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 6,86 mg/kg BW/d | 0,172 |
| PROC15 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0,34 mg/kg BW/d | 0,009 |
| PROC15 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 6,67 mg/m3 | 0,026 |

*Risk characterisation ratio

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

Please refer to the following documents: 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).

1. Short title of Exposure Scenario: Formulation of preparations

Main User Groups : **SU 3**
 Sectors of end-use : **SU 10**
 Process categories : **PROC2, PROC3, PROC4, PROC8b, PROC9, PROC15**
 Environmental Release Categories : **ERC2:**

2. Exposure scenario

2.1 Contributing scenario controlling environmental exposure for: ERC2

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC4, 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) : High volatile liquid

Frequency and duration of use

Application duration : > 4 h
 Frequency of use : 220 days/year

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Use only in area provided with appropriate exhaust ventilation., Good work practice required.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374., For personal protection see section 8.

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

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|-----------------------|----------------------------|--------------------------------|------------|-------------------------|-------|
| PROC2 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 6,67 mg/m ³ | 0,026 |
| PROC2 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 13,33 mg/kg BW/d | 0,333 |
| PROC3 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 13,33 mg/m ³ | 0,051 |
| PROC3 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0,34 mg/kg BW/d | 0,009 |
| PROC4 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 13,33 mg/m ³ | 0,051 |
| PROC4 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 6,86 mg/kg BW/d | 0,172 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 6 mg/m ³ | 0,023 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 6,86 mg/kg BW/d | 0,172 |
| PROC9 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 26,67 mg/m ³ | 0,103 |
| PROC9 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 6,86 mg/kg BW/d | 0,172 |
| PROC15 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 6,67 mg/m ³ | 0,026 |
| PROC15 | ECETOC TRA | With Local | Dermal | 0,34 mg/kg | 0,009 |

| | | | | | |
|--|--|---------------------|--|------|--|
| | | Exhaust Ventilation | | BW/d | |
|--|--|---------------------|--|------|--|

*Risk characterisation ratio

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

Please refer to the following documents: 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).

1. Short title of Exposure Scenario: Industrial use of processing aids in processes and products, not becoming part of articles

| | |
|----------------------------------|---|
| Main User Groups | : SU 3 |
| Sectors of end-use | : SU 3, SU9 |
| Chemical product category | : PC20, PC21 |
| Process categories | : PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC10, PROC15 |
| Environmental Release Categories | : ERC4, ERC6b: |

2. Exposure scenario

2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC6b

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC10, PROC15, PC20, PC21

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) : High volatile liquid

Frequency and duration of use

Application duration : > 4 h

Frequency of use : 220 days/year

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Use only in area provided with appropriate exhaust ventilation., Good work practice required.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374., For personal protection see section 8.

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

| Contributing Scenario | Exposure Assessment | Specific conditions | Value | Level of Exposure | RCR* |
|-----------------------|---------------------|---------------------|-------|-------------------|------|
|-----------------------|---------------------|---------------------|-------|-------------------|------|

| | Method | | | | |
|--------|------------|--------------------------------|------------|-------------------------|-------|
| PROC1 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0,34 mg/kg BW/d | 0,009 |
| PROC1 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 0,01 mg/m ³ | 0 |
| PROC2 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 6,67 mg/m ³ | 0,026 |
| PROC2 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 13,33 mg/kg BW/d | 0,333 |
| PROC3 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 13,33 mg/m ³ | 0,051 |
| PROC3 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0,34 mg/kg BW/d | 0,009 |
| PROC4 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 6,86 mg/kg BW/d | 0,172 |
| PROC4 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 13,33 mg/m ³ | 0,051 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 6,86 mg/kg BW/d | 0,172 |
| PROC8b | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 6 mg/m ³ | 0,023 |
| PROC9 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 6,86 mg/kg BW/d | 0,172 |
| PROC9 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 26,67 mg/m ³ | 0,103 |
| PROC10 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 53,33 mg/m ³ | 0,205 |
| PROC10 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 21,94 mg/kg BW/d | 0,549 |
| PROC15 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 6,67 mg/m ³ | 0,026 |
| PROC15 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0,34 mg/kg BW/d | 0,009 |

*Risk characterisation ratio

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

Please refer to the following documents: 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).

1. Short title of Exposure Scenario: Used as laboratory reagent.

Main User Groups : SU 22
Sectors of end-use : SU 3, SU 22, SU24
Chemical product category : PC19, PC20, PC21
Process categories : PROC10, PROC15
Environmental Release Categories : ERC4, ERC6a, ERC6b:

2. Exposure scenario

2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC6a, ERC6b

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).

2.2 Contributing scenario controlling worker exposure for: PROC10, PROC15, PC19, PC20, PC21

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) : High volatile liquid

Frequency and duration of use

Application duration : > 4 h
Frequency of use : 220 days/year

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor

Technical conditions and measures

Use only in area provided with appropriate exhaust ventilation., Good work practice required.

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves tested to EN374., For personal protection see section 8.

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

| Contributing Scenario | Exposure Assessment Method | Specific conditions | Value | Level of Exposure | RCR* |
|-----------------------|----------------------------|--------------------------------|------------|-------------------------|-------|
| PROC10 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 53,33 mg/m ³ | 0,205 |
| PROC10 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 21,94 mg/kg BW/d | 0,549 |
| PROC15 | ECETOC TRA | With Local Exhaust Ventilation | Inhalation | 6,67 mg/m ³ | 0,026 |
| PROC15 | ECETOC TRA | With Local Exhaust Ventilation | Dermal | 0,34 mg/kg BW/d | 0,009 |

*Risk characterisation ratio

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

Please refer to the following documents: 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).
