

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006 Version 2 Revision Date 07.12.2018

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

### 1.1 Product identifiers

Product name : Methanol

Product Number : 5347

Brand : Better Equipped

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

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration.

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

Uses advised against : Not for sale to the general public

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

Company : Better Equipped,  
Wrenbury Business Park,  
Wrenbury Road,  
Wrenbury,  
Nantwich, Cheshire,  
CW5 8EB, UK

Telephone +44 (0) 800 9707142

Fax +44 (0) 800 066 4443

E-mail address [sales@betterequipped.co.uk](mailto:sales@betterequipped.co.uk)

### 1.4 Emergency telephone number

Emergency Phone # +44 (0)1270 781238

## 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, Oral (Category 3), H301

Acute toxicity, Inhalation (Category 3), H331

Acute toxicity, Dermal (Category 3), H311

Specific target organ toxicity - single exposure (Category 1), H370

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

Pictogram



Signal word Danger

Hazard statement(s)  
H225  
H301 + H311 + H331

Highly flammable liquid and vapour.  
Toxic if swallowed, in contact with skin or if inhaled.

H370	Causes damage to organs.
Precautionary statement(s) P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves/ protective clothing.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if you feel unwell.
P304 + P340 + P311	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor.
P370 + P378 P403 + P235	In case of fire: Use dry powder or dry sand to extinguish. Store in a well-ventilated place. Keep cool.
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.

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## SECTION 3: Composition/information on ingredients

### 3.1 Substances

Synonyms	:	Methyl alcohol
Formula	:	CH <sub>4</sub> 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
<b>Methanol</b>		
CAS-No.	67-56-1	Flam. Liq. 2; Acute Tox. 3; STOT SE 1; H225, H301, H331, H311, H370 Concentration limits: >= 10 %: STOT SE 1, H370; 3 - < 10 %: STOT SE 2, H371;
EC-No.	200-659-6	
Index-No.	603-001-00-X	
Registration number	01-2119433307-44-XXXX	
		<= 100 %

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

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## 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

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

#### In case of eye contact

Flush eyes with water as a precaution.

#### 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**  
Dizziness, Drowsiness, metabolic acidosis, Blurred vision, Seizures., Coma, Blindness, death
- 4.3 Indication of any immediate medical attention and special treatment needed**  
No data available

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**SECTION 5: Firefighting measures**

- 5.1 Extinguishing media**  
**Suitable extinguishing media**  
Dry powder Dry sand  
**Unsuitable extinguishing media**  
Do NOT use water jet.
- 5.2 Special hazards arising from the substance or mixture**  
No data available
- 5.3 Advice for firefighters**  
Wear self-contained breathing apparatus for firefighting if necessary.
- 5.4 Further information**  
Use water spray to cool unopened containers.

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**SECTION 6: Accidental release measures**

- 6.1 Personal precautions, protective equipment and emergency procedures**  
**- 6.1.1 For non-emergency personnel**  
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.  
**- 6.1.2 For emergency responders**  
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 non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).
- 6.4 Reference to other sections**  
For disposal see section 13.

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**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.
- 7.1.2 Advice on general occupational hygiene:  
- No smoking.  
- Do not eat or drink.  
- Wash hands after use.  
- Remove contaminated clothing.

For precautions see section 2.2.

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

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. Keep in a cool, well-ventilated place.

### 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

#### Components with workplace control parameters

Component	CAS-No.	ValueForm of exposure	Control parameters	Basis
Methanol	67-56-1	TWA	200 ppm 260 mg/m <sup>3</sup>	Europe. Indicative occupational exposure limit values
	Remarks	Indicative Identifies the possibility of significant uptake through the skin		
		TWA	200 ppm 266 mg/m <sup>3</sup>	UK. EH40 WEL - Workplace Exposure Limits
		Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		
		STEL	250 ppm 333 mg/m <sup>3</sup>	UK. EH40 WEL - Workplace Exposure Limits
		Can be absorbed through skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.		

#### 8.1.2 Information on currently recommended monitoring procedures

For currently recommended monitoring procedures, see HSE series 'Methods for the Determination of Hazardous Substances' (MDHS)

#### 8.1.3 The relevant DNELs and PNECs for the substance/s for the exposure scenarios:

DNEL's. The derived no- or minimum effect level (DN(M)EL) is the level of exposure above which a human should not be exposed to a substance. Please note that when more than one summary is provided, DN(M)EL values may refer to constituents of the substance and not to the substance as a whole.

#### Derived No Effect Level (DNEL)

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

PNEC's. The Predicted No-Effect Concentration (PNEC) value is the concentration of a substance below which adverse effects in the environment are not expected to occur. Please note that when more than one summary is provided, PNEC values may refer to constituents of the substance and not to the substance as a whole.

**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. Use Local exhaust ventilation (LEV).

**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.

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## 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
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.

### 9.1 Other safety information

Minimum ignition energy	0.14 mJ
Conductivity	< 1 µS/cm
Relative vapour density	1.11

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

None known based on the data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

None under normal processing

### 10.4 Conditions to avoid

Heat, flames and sparks.

### 10.5 Incompatible materials

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

## 10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides

Other decomposition products - No data available

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Acute toxicity

LD50 Oral - Rat - male and female - > 1,187 - 2,769 mg/kg

Remarks: (ECHA) (Regulation (EC) No 1272/2008, Annex VI)

LDLO Oral - Human - 143 mg/kg

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

LC50 Inhalation - Rat - male and female - 4 h - 131.25 mg/l

Remarks: (ECHA) (Regulation (EC) No 1272/2008, Annex VI)

LD50 Dermal - Rabbit - 17,100 mg/kg

Remarks: (External MSDS) (Regulation (EC) No 1272/2008, Annex VI)

#### Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

Remarks: (ECHA) Drying-out effect resulting in rough and chapped skin.

#### Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

Remarks: (ECHA) Irritation of mucous membranes

#### Respiratory or skin sensitisation

Maximisation Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

#### Germ cell mutagenicity

Based on available data the classification criteria are not met.

Ames test

S. typhimurium

Result: negative

In vitro mammalian cell gene mutation test

fibroblast

Result: negative

OECD Test Guideline 474

Mouse - male and female - Bone marrow

Result: negative

#### Carcinogenicity

Did not show carcinogenic effects in animal experiments.

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

Based on available data the classification criteria are not met.







### 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/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 Other adverse effects

Additional ecological information                      Avoid release to the environment.

Stability in water                      at 19 °C 83 - 91 % - 72 h  
Remarks: Hydrolyses on contact with water. Hydrolyses readily.

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

#### Product

Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste.

Handle uncleaned containers like the product itself. Offer surplus and non-recyclable solutions to a licensed disposal company. Unused product may be returned and reused, in addition to disposal.

#### Contaminated packaging

Dispose of as unused product.

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## 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

### 14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

N/A

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**SECTION 15: Regulatory information****15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

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

**15.2 Chemical safety assessment**

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

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**SECTION 16: Other information****Full text of H-Statements referred to under sections 2 and 3.**

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.
H371	May cause damage to organs.

**Revisions made since previous version of data sheet:**

The following sections of this data sheet have been updated:

1.1, 1.2, 4.1, 5.1, 6.1, 7.1, 8.1, 8.2, 11, 12, 13, 14.7, 16

We strongly recommend reading the entire data sheet for this chemical in preparation ahead of use.

**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. Better Equipped and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

## Annex: Exposure scenario

### Identified uses:

#### Use: Used as chemical intermediate

<b>SU 3:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites
<b>SU 3, SU9:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites, Manufacture of fine chemicals
<b>PC19:</b> Intermediate
<b>PROC1:</b> Use in closed process, no likelihood of exposure <b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure <b>PROC3:</b> Use in closed batch process (synthesis or formulation) <b>PROC4:</b> Use in batch and other process (synthesis) where opportunity for exposure arises <b>PROC8b:</b> Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities <b>PROC15:</b> Use as laboratory reagent
<b>ERC1, ERC4, ERC6a:</b> 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

<b>SU 3:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites
<b>SU 10:</b> Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
<b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure <b>PROC3:</b> Use in closed batch process (synthesis or formulation) <b>PROC4:</b> Use in batch and other process (synthesis) where opportunity for exposure arises <b>PROC8b:</b> Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities <b>PROC9:</b> Transfer of substance or preparation into small containers (dedicated filling line, including weighing) <b>PROC15:</b> Use as laboratory reagent
<b>ERC2:</b> Formulation of preparations

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

<b>SU 3:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites
<b>SU 3, SU9:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites, Manufacture of fine chemicals
<b>PC20:</b> Products such as pH-regulators, flocculants, precipitants, neutralization agents <b>PC21:</b> Laboratory chemicals
<b>PROC1:</b> Use in closed process, no likelihood of exposure <b>PROC2:</b> Use in closed, continuous process with occasional controlled exposure <b>PROC3:</b> Use in closed batch process (synthesis or formulation) <b>PROC4:</b> Use in batch and other process (synthesis) where opportunity for exposure arises <b>PROC8b:</b> Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities <b>PROC9:</b> Transfer of substance or preparation into small containers (dedicated filling line, including weighing) <b>PROC10:</b> Roller application or brushing <b>PROC15:</b> Use as laboratory reagent
<b>ERC4, ERC6b:</b> 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

<b>SU 22:</b> Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
<b>SU 3, SU 22, SU24:</b> 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
<b>PC19:</b> Intermediate <b>PC20:</b> Products such as pH-regulators, flocculants, precipitants, neutralization agents <b>PC21:</b> Laboratory chemicals

<b>PROC10:</b> Roller application or brushing
<b>PROC15:</b> Use as laboratory reagent
<b>ERC4, ERC6a, ERC6b:</b> 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

**Use: Surface treatment**

<b>SU 3:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites
<b>SU 3, SU9:</b> Industrial uses: Uses of substances as such or in preparations at industrial sites, Manufacture of fine chemicals
<b>PC35:</b> Washing and cleaning products (including solvent based products)
<b>PROC5:</b> Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)
<b>PROC7:</b> Industrial spraying
<b>PROC8a:</b> Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities
<b>PROC10:</b> Roller application or brushing
<b>PROC13:</b> Treatment of articles by dipping and pouring
<b>ERC2, ERC4, ERC6a:</b> 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)

**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).
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**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
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**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*
PROC1	ECETOC TRA	With Local Exhaust Ventilation	Dermal	0.00686 mg/kg BW/d	0
PROC1	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	0.0133 mg/m <sup>3</sup>	0
PROC2	ECETOC TRA	With Local Exhaust Ventilation	Dermal	0.274 mg/kg BW/d	0.007
PROC2	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	3.33 mg/m <sup>3</sup>	0.013
PROC3	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	6.67 mg/m <sup>3</sup>	0.026
PROC3	ECETOC TRA	With Local Exhaust Ventilation	Dermal	0.137 mg/kg BW/d	0.003
PROC4	ECETOC TRA	With Local Exhaust Ventilation	Dermal	1.37 mg/kg BW/d	0.034
PROC4	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	13.3 mg/m <sup>3</sup>	0.051
PROC8b	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	10 mg/m <sup>3</sup>	0.038
PROC8b	ECETOC TRA	With Local Exhaust Ventilation	Dermal	2.74 mg/kg BW/d	0.069
PROC15	ECETOC TRA	With Local Exhaust Ventilation	Dermal	0.0686 mg/kg BW/d	0.002
PROC15	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	13.3 mg/m <sup>3</sup>	0.051

\*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	3.33 mg/m <sup>3</sup>	0.013
PROC2	ECETOC TRA	With Local Exhaust Ventilation	Dermal	0.274 mg/kg BW/d	0.007
PROC3	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	6.67 mg/m <sup>3</sup>	0.026
PROC3	ECETOC TRA	With Local Exhaust Ventilation	Dermal	0.137 mg/kg BW/d	0.003
PROC4	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	13.3 mg/m <sup>3</sup>	0.051
PROC4	ECETOC TRA	With Local Exhaust	Dermal	1.37 mg/kg BW/d	0.034

		Ventilation			
PROC8b	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	10 mg/m <sup>3</sup>	0.038
PROC8b	ECETOC TRA	With Local Exhaust Ventilation	Dermal	2.74 mg/kg BW/d	0.069
PROC9	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	26.7 mg/m <sup>3</sup>	0.103
PROC9	ECETOC TRA	With Local Exhaust Ventilation	Dermal	1.37 mg/kg BW/d	0.034
PROC15	ECETOC TRA	With Local Exhaust Ventilation	Dermal	0.0686 mg/kg BW/d	0.002
PROC15	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	13.3 mg/m <sup>3</sup>	0.051

\*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 Method	Specific conditions	Value	Level of Exposure	RCR*
PROC1	ECETOC TRA	With Local Exhaust Ventilation	Dermal	0.00686 mg/kg BW/d	0
PROC1	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	0.0133 mg/m <sup>3</sup>	0
PROC2	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	3.33 mg/m <sup>3</sup>	0.013
PROC2	ECETOC TRA	With Local Exhaust Ventilation	Dermal	0.274 mg/kg BW/d	0.007
PROC3	ECETOC TRA	With Local Exhaust Ventilation	Dermal	0.137 mg/kg BW/d	0.003
PROC3	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	6.67 mg/m <sup>3</sup>	0.026
PROC4	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	13.3 mg/m <sup>3</sup>	0.051
PROC4	ECETOC TRA	With Local Exhaust Ventilation	Dermal	1.37 mg/kg BW/d	0.034
PROC8b	ECETOC TRA	With Local Exhaust Ventilation	Dermal	2.74 mg/kg BW/d	0.069
PROC8b	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	10 mg/m <sup>3</sup>	0.038
PROC9	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	26.7 mg/m <sup>3</sup>	0.103
PROC9	ECETOC TRA	With Local Exhaust Ventilation	Dermal	1.37 mg/kg BW/d	0.034
PROC10	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	33.3 mg/m <sup>3</sup>	0.128
PROC10	ECETOC TRA	With Local Exhaust	Dermal	5.49 mg/kg BW/d	0.137



		Ventilation			
PROC15	ECETOC TRA	With Local Exhaust Ventilation	Dermal	0.0686 mg/kg BW/d	0.002
PROC15	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	13.3 mg/m <sup>3</sup>	0.051

\*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	Dermal	5.49 mg/kg BW/d	0.137
PROC10	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	33.3 mg/m <sup>3</sup>	0.128
PROC15	ECETOC TRA	With Local Exhaust Ventilation	Dermal	0.0686 mg/kg BW/d	0.002
PROC15	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	13.3 mg/m <sup>3</sup>	0.051

\*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: Surface treatment

Main User Groups : SU 3  
 Sectors of end-use : SU 3, SU9  
 Chemical product category : PC35  
 Process categories : PROC5, PROC7, PROC8a, PROC10, PROC13  
 Environmental Release Categories : ERC2, ERC4, ERC6a:

#### 2. Exposure scenario

##### 2.1 Contributing scenario controlling environmental exposure for: ERC2, 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: PROC5, PROC7, PROC8a, PROC10, PROC13, PC35

###### 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*
PROC5	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	33.3 mg/m <sup>3</sup>	0.128
PROC5	ECETOC TRA	With Local Exhaust Ventilation	Dermal	2.74 mg/kg BW/d	0.069
PROC7	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	33.3 mg/m <sup>3</sup>	0.128
PROC7	ECETOC TRA	With Local Exhaust Ventilation	Dermal	8.57 mg/kg BW/d	0.214
PROC8a	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	33.3 mg/m <sup>3</sup>	0.128
PROC8a	ECETOC TRA	With Local Exhaust Ventilation	Dermal	2.74 mg/kg BW/d	0.069
PROC10	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	33.3 mg/m <sup>3</sup>	0.128
PROC10	ECETOC TRA	With Local Exhaust Ventilation	Dermal	5.49 mg/kg BW/d	0.137
PROC13	ECETOC TRA	With Local Exhaust Ventilation	Dermal	2.74 mg/kg BW/d	0.069
PROC13	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	33.3 mg/m <sup>3</sup>	0.128

\*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).