

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.5 Revision Date 12.01.2016

Print Date 28.01.2016

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

Product name : Methanol

Product Number : 34860

Brand : SIGALD

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 Company Ltd.
The Old Brickyard
NEW ROAD, GILLINGHAM
Dorset
SP8 4XT
UNITED KINGDOM

Telephone : +44 (0)1747 833000

Fax : +44 (0)1747 833313

E-mail address : eurtechserv@sial.com

1.4 Emergency telephone number

Emergency Phone # +44 (0)1747 833100

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

Highly flammable liquid and vapour.

H301 + H311 + H331

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 or doctor/ physician if you feel unwell.
P304 + P340 + P311	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician.
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.

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		
CAS-No. 67-56-1 EC-No. 200-659-6 Index-No. 603-001-00-X Registration number 01-2119433307-44-XXXX	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;	<= 100 %

For the full text of the H-Statements 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

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

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

Carbon oxides

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.

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 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.

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

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.

Storage class (TRGS 510): 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

Components with workplace control parameters

Component	CAS-No.	Value/Form of exposure	Control parameters	Basis
Methanol	67-56-1	TWA	200 ppm 260 mg/m ³	Europe. Indicative occupational exposure limit values
	Remarks	Identifies the possibility of significant uptake through the skin Indicative		
		TWA	200 ppm 266 mg/m ³	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 ³	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.		

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 ³
Workers	Inhalation	Acute local effects	260 mg/m ³
Workers	Inhalation	Long-term systemic effects	260 mg/m ³
Workers	Inhalation	Long-term local effects	260 mg/m ³
Consumers	Inhalation	Acute systemic effects	50 mg/m ³
Consumers	Inhalation	Acute local effects	50 mg/m ³
Consumers	Inhalation	Long-term systemic effects	50 mg/m ³
Consumers	Inhalation	Long-term local effects	50 mg/m ³

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
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.

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 (GPMT) - 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

Effects due to ingestion may include:, Headache, Dizziness, Drowsiness, metabolic acidosis, Coma, Seizures., Methyl alcohol may be fatal or cause blindness if swallowed.

Symptoms may be delayed., Prolonged or repeated exposure may cause:, Tremors, insomnia, impairment of voluntary movement, peripheral neuritis

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 EC50 - Daphnia magna (Water flea) - > 10,000.00 mg/l - 48 h

invertebrates

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/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.

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.

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

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**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.

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 + H331	Toxic if swallowed, in contact with skin or if inhaled
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H370	Causes damage to organs.
H371	May cause damage to organs.

Further information

Copyright 2016 Sigma-Aldrich Co. LLC. License granted to make unlimited paper copies for internal use only.

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, precipitants, 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, precipitants, 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

Use: Surface treatment

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
PC35: Washing and cleaning products (including solvent based products)
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)
PROC7: Industrial spraying
PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities
PROC10: Roller application or brushing
PROC13: Treatment of articles by dipping and pouring
ERC2, ERC4, ERC6a: Formulation of preparations, Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use resulting in manufacture of another substance (use of intermediates)

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

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 ³	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 ³	0.013
PROC3	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	6.67 mg/m ³	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 ³	0.051
PROC8b	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	10 mg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	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 ³	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 ³	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 ³	0
PROC2	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	3.33 mg/m ³	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 ³	0.026
PROC4	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	13.3 mg/m ³	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 ³	0.038
PROC9	ECETOC TRA	With Local Exhaust Ventilation	Inhalation	26.7 mg/m ³	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 ³	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 ³	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 ³	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 ³	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 ³	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 ³	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 ³	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 ³	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 ³	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).