



SAFETY DATA SHEET

METHANOL

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

1.1 Product identifier

Product name : METHANOL
Index number : 603-001-00-X
EC number : 200-659-6
REACH Registration number

<u>Registration number</u>	<u>Legal entity</u>
01-2119433307-44	-

CAS number : 67-56-1
Other means of identification : Methyl alcohol
Chemical formula : C-H4-O

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

Use of the substance/ mixture : Industrial/Professional Use: Raw material. Intermediate. Formulation. Fuel. Solvent.

Identified uses

Use as an intermediate . Use as a process chemical. Industrial settings
Distribution of substance . Industrial settings
Formulation and (re)packing of substances and mixtures . Industrial settings
Waste water treatment: Industrial settings
Use in cleaning agents . Industrial settings
Use in laboratories . Industrial settings
Use as a fuel . Industrial settings
Use as a fuel . Professional settings
Use in cleaning agents . Professional use
Use in oil and gas field drilling and production operations . Professional settings
Use in laboratories. Professional settings

1.3 Details of the supplier of the safety data sheet

Supplier : Dynea AS
P.O.Box 160, N-2001 Lillestrøm
Norway
Tel. +47 63897100
Fax. +47 63897610
e-mail address of person responsible for this SDS : sds@dynea.com

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : Not available.

Supplier

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

Telephone number : +47 63897100

Hours of operation : 24 hours

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mono-constituent substance

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

The product is classified as hazardous according to Regulation (EC) 1272/2008 as amended.

Flam. Liq. 2, H225

Acute Tox. 3, H301

Acute Tox. 3, H311

Acute Tox. 3, H331

STOT SE 1, H370 (central nervous system (CNS) and optic nerve)

See Section 16 for the full text of the R phrases or H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H225 - Highly flammable liquid and vapour.
H301 + H311 + H331 - Toxic if swallowed, in contact with skin or if inhaled.
H370 - Causes damage to organs. (central nervous system (CNS), optic nerve)

Precautionary statements : P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.
P260 - Do not breathe vapour.
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or physician.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
P235 - Keep cool.
P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Supplemental label elements : Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Special packaging requirements

Not applicable.

2.3 Other hazards

SECTION 2: Hazards identification

Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII : No.

Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII : No.

Other hazards which do not result in classification : Methanol fires are invisible.

SECTION 3: Composition/information on ingredients

3.1 Substances : Mono-constituent substance

Product/ingredient name	Identifiers	%	Classification	Type
Methanol	EC: 200-659-6 CAS: 67-56-1 Index: 603-001-00-X	80 - 100	Flam. Liq. 2, H225 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 STOT SE 1, H370 (central nervous system (CNS) and optic nerve) See Section 16 for the full text of the H statements declared above.	[A]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

[A] Constituent

[B] Impurity

[C] Stabilising additive

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4: First aid measures**4.1 Description of first aid measures**

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Move exposed person to fresh air. Get medical attention.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs.
- General** : Move the victim to a safe area as soon as possible. If unconscious, place in recovery position and seek medical advice. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. Allow the victim to rest in a well-ventilated area.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus.

SECTION 4: First aid measures**4.2 Most important symptoms and effects, both acute and delayed****Potential acute health effects**

- Inhalation** : Toxic if inhaled.
- Skin contact** : Toxic in contact with skin.
- Ingestion** : Toxic if swallowed. May be fatal or cause blindness if swallowed. For humans, lethal dose of methanol is approximately 1 g/kg body weight.

Over-exposure signs/symptoms

- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
visual disturbances
breathing difficulty or shortness of breath
- Skin contact** : May cause skin dryness and irritation.
- Ingestion** : nausea or vomiting
visual disturbances
headache
dizziness/vertigo
drowsiness/fatigue
breathing difficulty or shortness of breath

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : Treatment: Administer 50 ml of pure ethanol in a drinkable concentration.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

- Suitable extinguishing media** : Use dry chemical, CO₂, alcohol-resistant foam or water spray (fog).
- Unsuitable extinguishing media** : Do not use water jet.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : Highly flammable liquid and vapour. Methanol fires are invisible. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

5.3 Advice for firefighters

- Special precautions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
- Additional information** : No.

SECTION 5: Firefighting measures**SECTION 6: Accidental release measures****6.1 Personal precautions, protective equipment and emergency procedures**

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

6.2 Environmental precautions

Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

6.3 Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Absorb with liquid-binding material (sand, diatomite, universal binders etc.) or use a spill kit.
- Large spill** : Approach the release from upwind. Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Contaminated absorbent material may pose the same hazard as the spilt product.

- 6.4 Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : See Section 8 for information on appropriate personal protective equipment. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Store and use away from heat, sparks, open flame or any other ignition source. Use spark-proof tools and explosion-proof equipment. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

SECTION 7: Handling and storage

Store in accordance with local regulations. Store in a segregated and approved area. Store away from incompatible materials (see Section 10). Store locked up. Eliminate all ignition sources. Keep away from food, drink and animal feeding stuffs. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Seveso II Directive - Reporting thresholds (in tonnes)**Named substances**

Name	Notification and MAPP threshold	Safety report threshold
methanol	500	5000

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters**Occupational exposure limits**

Product/ingredient name	Exposure limit values
methanol	<p>EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.</p> <p>STEL: 333 mg/m³ 15 minutes. STEL: 250 ppm 15 minutes. TWA: 266 mg/m³ 8 hours. TWA: 200 ppm 8 hours.</p>

Recommended monitoring procedures : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
methanol	DNEL	Short term Dermal	40 mg/kg bw/day	Workers	Systemic
	DNEL	Short term Inhalation	260 mg/m ³	Workers	Systemic
	DNEL	Short term Inhalation	260 mg/m ³	Workers	Local
	DNEL	Long term Dermal	40 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	260 mg/m ³	Workers	Systemic

SECTION 8: Exposure controls/personal protection

	DNEL	Long term Inhalation	260 mg/m ³	Workers	Local
	DNEL	Short term Dermal	8 mg/kg bw/day	Consumers	Systemic
	DNEL	Short term Inhalation	50 mg/m ³	Consumers	Systemic
	DNEL	Short term Oral	8 mg/kg bw/day	Consumers	Systemic
	DNEL	Short term Inhalation	50 mg/m ³	Consumers	Local
	DNEL	Long term Dermal	8 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	50 mg/m ³	Consumers	Systemic
	DNEL	Long term Oral	8 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Inhalation	50 mg/m ³	Consumers	Local

PNECs

Product/ingredient name	Type	Compartment Detail	Value	Method Detail
methanol	PNEC	Fresh water	154 mg/l	Assessment Factors
	PNEC	Marine	15.4 mg/l	Assessment Factors
	PNEC	Intermittent release	1540 mg/l	Assessment Factors
	PNEC	Sediment	570.4 mg/kg dwt	Equilibrium Partitioning
	PNEC	Soil	23.5 mg/kg ww	Equilibrium Partitioning
	PNEC	Sewage Treatment Plant	100 mg/l	Assessment Factors

8.2 Exposure controls

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Use eye protection according to EN 166, designed to protect against liquid splashes. Recommended: Safety glasses with side shields.

Hand protection : Wear suitable gloves tested to EN374. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers.
Recommended : Protective Index 6 / Breakthrough time >480 minutes: butyl rubber 0.7 mm thickness

Other skin protection : For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods. Wear work clothing with long sleeves. Cotton or cotton/synthetic overalls or coveralls are normally suitable.

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 8: Exposure controls/personal protection

Long Term Exposure / high concentrations : Self-contained respirator (DIN EN 133) or full face mask (DIN EN 136)

Short term exposure / Low exposure : Half-face mask (DIN EN 140)

Recommended: Type A (Brown): organic gases and vapours with a boiling point higher than 65°C.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

SECTION 9: Physical and chemical properties**9.1 Information on basic physical and chemical properties**

Physical state	: Liquid.
Colour	: Colourless. Clear.
Odour	: Characteristic.
Odour threshold	: Not available.
pH	: Not available.
Melting point/freezing point	: -97.8°C
Initial boiling point and boiling range	: 64.7°C
Flash point	: Closed cup: 9.7°C Open cup: 15.6°C
Evaporation rate	: 2.1 (butyl acetate = 1)
Flammability (solid, gas)	: Not applicable.
Burning time	: Not applicable.
Burning rate	: Not applicable.
Upper/lower flammability or explosive limits	: Lower: 6% Upper: 44%
Vapour pressure	: 16.9 kPa (126.96 mm Hg) [25°C]
Vapour density	: 1.1 [Air = 1]
Relative density	: 0.79
Density (liquid)	: 0.7915 g/cm ³ [20°C]
Solubility	: Soluble in water
Partition coefficient: n-octanol/water	: -0.77
Auto-ignition temperature	: 455°C
Decomposition temperature	: Not available.
Viscosity	: Dynamic: 0.54 to 0.59 mPa·s [25 °C]
Explosive properties	: No.
Oxidising properties	: No.

9.2 Other information

VOC content (Without volume exclusion) : 100 % (w/w)
791.5 g/l

SECTION 10: Stability and reactivity

- 10.1 Reactivity** : No specific test data related to reactivity available for this product or its ingredients.
- 10.2 Chemical stability** : The product is stable.
- 10.3 Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- 10.4 Conditions to avoid** : Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.
- 10.5 Incompatible materials** : Reactive or incompatible with the following materials:
oxidizing materials
- 10.6 Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Potential Adverse effects**

- Inhalation** : Toxic if inhaled.
Can cause central nervous system (CNS) depression.
Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
visual disturbances
breathing difficulty or shortness of breath
- Ingestion** : Toxic if swallowed. May be fatal or cause blindness if swallowed. For humans, lethal dose of methanol is approximately 1 g/kg body weight.
nausea or vomiting
visual disturbances
headache
dizziness/vertigo
drowsiness/fatigue
breathing difficulty or shortness of breath
- Skin contact** : Toxic in contact with skin.

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
methanol	LC50 Inhalation Vapour	Rat - Male,	128.2 mg/l	4 hours
	LD50 Dermal	Female Rabbit	17100 mg/kg	-

Toxic by inhalation, in contact with skin and if swallowed.

- Product Conclusion/ Summary** : Toxic if inhaled. Toxic if swallowed. Toxic in contact with skin.

Irritation/Corrosion

- Skin** : Based on available data, the classification criteria are not met.
- Eyes** : Based on available data, the classification criteria are not met.

SECTION 11: Toxicological information

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

Sensitisation

Product/ingredient name	Route of exposure	Species	Result
methanol	Respiratory skin	Guinea pig Guinea pig	Not sensitizing Not sensitizing

Skin : Not sensitizing

Respiratory : Not sensitizing

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure
methanol	Chronic NOAEL Oral	Rat - Male, Female	466 to 529 mg/ kg Repeated dose	104 weeks
	Chronic NOEC Inhalation Vapour	Rat - Male, Female	0.13 mg/l	12 months
	Chronic NOAEC Inhalation Vapour	Rat - Male, Female	1.3 mg/l Continuous	108 days
	Chronic NOAEC Inhalation Vapour	Rat	1.33 mg/l Continuous	17 days; 22.7 hours per day

Mutagenicity

Based on available data, the classification criteria are not met.

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

Teratogenicity

Based on available data, the classification criteria are not met.

Product Conclusion/ Summary : Based on available data, the classification criteria are not met.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
methanol	Category 1	All	central nervous system (CNS) and optic nerve

Specific target organ toxicity (repeated exposure)

Based on available data, the classification criteria are not met.

SECTION 11: Toxicological information

Aspiration hazard

Product Conclusion/Summary : Based on available data, the classification criteria are not met.

Interactive effects : No specific data.

Toxicokinetics

Absorption : Methanol is readily absorbed after inhalation, ingestion and dermal contact.

Distribution : Methanol distributes rapidly throughout the body.

Metabolism : The mammalian metabolism of methanol occurs mainly in the liver, where methanol is initially converted to formaldehyde, which is in turn converted to formate. Formate is converted to carbon dioxide and water. In humans and mokeys, the conversion of formaldehyde is mediated by alcohol dehydrogenases and basically limited to the capacity of those enzymes. In rodents, the oxidation to formaldehyde predominantly employs the catalase-peroxidase pathway which is of less capacity and rate-limiting. Upon saturation at high doses, methanol accumulates in the blood of rodents and primates. Formaldehyde is further oxidized to formic acid and finally, formic acid to carbon dioxide (CO₂). In primates, the last reaction step, conversion of formate to carbon dioxide by the formyl-tetrahydrofolate synthetase, is of comparably low capacity which may lead to disproportionate increase of formate in the blood and in sensitive target tissues such as CNS and retina.

The critical methanol dose that saturates the folate pathway in humans is estimated to be ≥200 mg/kg bw. Metabolic saturation in humans is also less likely to happen during inhalation where the dose is distributed over several hours.

In humans, the half-life time is approximately 2.5-3 hours at doses lower than 100 mg/kg bw. At higher doses, the half-life can be 24 hours or more.

Elimination : Metabolism in humans, rodents and monkeys contributes up to 98% of the clearance with more than 90% of the administered dose exhaled as carbon dioxide. Renal and pulmonary excretion contributes only about 2-3%.

Other information : No specific data.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
methanol	EC50 22000 mg/l Fresh water	Algae - Selenastrum capricornutum	96 hours Static
	IC50 8800 mg/l Fresh water	Micro-organism - Nitrosomonas sp.	24 hours Static
	Acute EC50 >10000 mg/l Fresh water	Daphnia - Daphnia magna	48 hours Static
	Acute LC50 15400 mg/l Fresh water	Fish - Lepomis macrochirus	96 hours Flow through
	Chronic NOEC 7900 mg/l Fresh water	Fish - Oryzias latipes	200 hours Static

Conclusion/Summary : No known significant effects or critical hazards.

12.2 Persistence and degradability

SECTION 12: Ecological information

Product/ingredient name	Test	Result	Dose	Inoculum
methanol	-	83 to 91 % - Readily - 3 days	-	Fresh water
	-	71 to 83 % - Readily - 5 days	BOD/ThOD	Sediment
	-	69 to 97 % - 5 days	O ₂ Consumption	Sewage
	-	53.4 % - 5 days	-	Marine water
	-	46.3 % - 5 days	-	-

Conclusion/Summary : Readily biodegradable

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
methanol	-	50%; 17.2 day(s)	Readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
methanol	-0.77	<10	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : 0.13 to 1

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : No.

vPvB : No.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods**Product**

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste : Yes.

European waste catalogue (EWC)

Waste code	Waste designation
07 02 04*	other organic solvents, washing liquids and mother liquors

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

SECTION 13: Disposal considerations

Special precautions : This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	UN1230	UN1230	UN1230	UN1230
14.2 UN proper shipping name	METHANOL	METHANOL	METHANOL	Methanol
14.3 Transport hazard class(es)	3 (6.1) 	3 (6.1) 	3 (6.1) 	3 (6.1)
14.4 Packing group	II	II	II	II
14.5 Environmental hazards	No.	No.	No.	No.
Additional information	<u>Hazard identification number</u> 336 <u>Limited quantity</u> 1 L <u>Special provisions</u> 279 <u>Tunnel code</u> (D/E)	<u>Special provisions</u> 279, 802	<u>Emergency schedules (EmS)</u> F-E, S-D <u>Special provisions</u> 279	<u>Passenger and Cargo Aircraft</u> Quantity limitation: 1 L Packaging instructions: 305 <u>Cargo Aircraft Only</u> Quantity limitation: 60 L Packaging instructions: 307 <u>Limited Quantities - Passenger Aircraft</u> Quantity limitation: 1 L Packaging instructions: Y305 <u>Special provisions</u> A104, A113

14.6 Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles : Not applicable.

Other EU regulations

Europe inventory : This material is listed or exempted.

Black List Chemicals : Not listed

Priority List Chemicals : Not listed

Integrated pollution prevention and control list (IPPC) - Air : Not listed

Integrated pollution prevention and control list (IPPC) - Water : Not listed

Seveso II Directive

This product is controlled under the Seveso II Directive.

Named substances

Name
methanol

National regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

15.2 Chemical Safety Assessment : Complete.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
 CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Flam. Liq. 2, H225 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 STOT SE 1, H370 (central nervous system (CNS) and optic nerve)	Expert judgment Expert judgment Expert judgment On basis of test data Expert judgment

Full text of abbreviated H statements :	H225 H301 (oral) H311 (dermal) H331 (inhalation) H370 (central nervous system (CNS) and optic nerve)	Highly flammable liquid and vapour. Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled. Causes damage to organs. (central nervous system (CNS) and optic nerve)
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Full text of classifications [CLP/GHS] :	Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 Flam. Liq. 2, H225 STOT SE 1, H370 (central nervous system (CNS) and optic nerve)	ACUTE TOXICITY (oral) - Category 3 ACUTE TOXICITY (dermal) - Category 3 ACUTE TOXICITY (inhalation) - Category 3 FLAMMABLE LIQUIDS - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (central nervous system (CNS) and optic nerve) - Category 1
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Date of issue/ Date of revision : 19.11.2015.
Date of previous issue : 18.06.2015.
Previous product name : Not available.
Version : 3.01

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : Mono-constituent substance
Product name : METHANOL

Section 1 - Title

Short title of the exposure scenario : Industrial use of methanol as an intermediate or as a process chemical

List of use descriptors : **Identified use name:** Use as an intermediate . Use as a process chemical. Industrial settings
Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC15
Substance supplied to that use in form of: As such, In a mixture
Sector of end use: SU03, SU08, SU09
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC01, ERC04, ERC06a
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Manufacture of substances - ERC01**
Industrial use of processing aids in processes and products, not becoming part of articles - ERC04
Industrial use resulting in manufacture of another substance (use of intermediates) - ERC06a

Health contributing scenarios : **Use in closed process, no likelihood of exposure - PROC01**
Use in closed, continuous process with occasional controlled exposure - PROC02
Use in closed batch process (synthesis or formulation) - PROC03
Use in batch and other process (synthesis) where opportunity for exposure arises - PROC04
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at non-dedicated facilities - PROC08a
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at dedicated facilities - PROC08b
Use a laboratory reagent - PROC15

Number of the ES : 1

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 0: Manufacture of substances

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling environmental exposure for 1: Industrial use of processing aids in processes and products, not becoming part of articles

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling environmental exposure for 2: Industrial use resulting in manufacture of another substance (use of intermediates)

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Dermal exposure: Palm of one hand (240cm ²)
Area of use:	: Indoor
Ventilation control measures	: Not applicable.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Contributing scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Palm of two hands (480cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 90%.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Contributing scenario controlling worker exposure for 2: Use in closed batch process (synthesis or formulation)

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management	: Dermal exposure: Palm of one hand (240cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 90%.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Contributing scenario controlling worker exposure for 3: Use in batch and other process (synthesis) where opportunity for exposure arises

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Palm of two hands (480cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 90%.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Contributing scenario controlling worker exposure for 4: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Both hands (960 cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 90%.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Contributing scenario controlling worker exposure for 5: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Palm of two hands (480cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 97%.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Contributing scenario controlling worker exposure for 6: Use a laboratory reagent

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Dermal exposure: Palm of one hand (240cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 90%.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 0: Manufacture of substances

Exposure assessment (environment):	: As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.
Exposure estimation	: Not relevant.

Exposure estimation and reference to its source - Environment: 5: Industrial use of processing aids in processes and products, not becoming part of articles

Exposure assessment (environment): : As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Exposure estimation : Not relevant.

Exposure estimation and reference to its source - Environment: 6: Industrial use resulting in manufacture of another substance (use of intermediates)

Exposure assessment (environment): : As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Exposure estimation : Not relevant.

Exposure estimation and reference to its source - Workers: 1: Use in closed process, no likelihood of exposure

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.

Exposure estimation : Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008
Long term, Systemic, Inhalation: 0.01 mg/m³ . Risk characterisation ratio : 0.0004
Long term, Systemic, Combined: Risk characterisation ratio : 0.0080
Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008

Short term, Systemic, Inhalation: 0.05 mg/m³ . Risk characterisation ratio : 0.0082
Short term, Systemic, Combined: 0.0082

Exposure estimation and reference to its source - Workers: 2: Use in closed, continuous process with occasional controlled exposure

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.

Exposure estimation : Long term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034
Long term, Systemic, Inhalation: 6.67 mg/m³ . Risk characterisation ratio : 0.026
Long term, Systemic, Combined: Risk characterisation ratio : 0.060
Short term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034
Short term, Systemic, Inhalation: 26.67 mg/m³ . Risk characterisation ratio : 0.103
Short term, Systemic, Combined: 0.137

Exposure estimation and reference to its source - Workers: 3: Use in closed batch process (synthesis or formulation)

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.

Exposure estimation : Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008
Long term, Systemic, Inhalation: 13.33 mg/m³ . Risk characterisation ratio : 0.051
Long term, Systemic, Combined: Risk characterisation ratio : 0.059
Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008

Short term, Systemic, Inhalation: 53.33mg/m³ . Risk characterisation ratio : 0.205
Short term, Systemic, Combined: 0.293

Exposure estimation and reference to its source - Workers: 4: Use in batch and other process (synthesis) where opportunity for exposure arises

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.

Exposure estimation : Long term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171
Long term, Systemic, Inhalation: 13.33 mg/m³ . Risk characterisation ratio : 0.051
Long term, Systemic, Combined: Risk characterisation ratio : 0.222
Short term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171
Short term, Systemic, Inhalation: 53.33mg/m³ . Risk characterisation ratio : 0.205
Short term, Systemic, Combined: 0.376

Exposure estimation and reference to its source - Workers: 7: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
Exposure estimation	: Long term, Systemic, Dermal: 13.71mg/kg bw/day . Risk characterisation ratio : 0.343 Long term, Systemic, Inhalation: 33.33mg/m ³ . Risk characterisation ratio : 0.128 Long term, Systemic, Combined: Risk characterisation ratio : 0.471 Short term, Systemic, Dermal: 13.71mg/kg bw/day . Risk characterisation ratio : 0.343 Short term, Systemic, Inhalation: 66.67mg/m ³ . Risk characterisation ratio : 0.256 Short term, Systemic, Combined: 0.599

Exposure estimation and reference to its source - Workers: 8: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
Exposure estimation	: Long term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171 Long term, Systemic, Inhalation: 6.00mg/m ³ . Risk characterisation ratio : 0.023 Long term, Systemic, Combined: Risk characterisation ratio : 0.194 Short term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171 Short term, Systemic, Inhalation: 12.00mg/m ³ . Risk characterisation ratio : 0.046 Short term, Systemic, Combined: 0.217

Exposure estimation and reference to its source - Workers: 9: Use a laboratory reagent	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.009 Long term, Systemic, Inhalation: 6.67mg/m ³ . Risk characterisation ratio :0.026 Long term, Systemic, Combined: Risk characterisation ratio : 0.035 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.009 Short term, Systemic, Inhalation: 13.33mg/m ³ . Risk characterisation ratio : 0.051 Short term, Systemic, Combined: 0.060

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Not relevant.
Health	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For scaling see http://www.ecetoc.org/tra

Additional good practice advice beyond the REACH CSA

Environment	: Ensure control measures are regularly inspected and maintained.
Health	: Ensure good industrial hygiene. Ensure control measures are regularly inspected and maintained.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : Mono-constituent substance
Product name : METHANOL

Section 1 - Title

Short title of the exposure scenario : Distribution of methanol. Industrial settings.

List of use descriptors : **Identified use name:** Distribution of substance . Industrial settings
Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09
Substance supplied to that use in form of: As such, In a mixture
Sector of end use: SU03, SU08, SU09
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC01, ERC02
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Manufacture of substances** - ERC01
Formulation of preparations - ERC02

Health contributing scenarios : **Use in closed process, no likelihood of exposure** - PROC01
Use in closed, continuous process with occasional controlled exposure - PROC02
Use in closed batch process (synthesis or formulation) - PROC03
Use in batch and other process (synthesis) where opportunity for exposure arises - PROC04
Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities - PROC08a
Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities - PROC08b
Transfer of substance or preparation into small containers (dedicated filling line, including weighing) - PROC09

Number of the ES : 2

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 0: Manufacture of substances

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling environmental exposure for 1: Formulation of preparations

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Date of issue/Date of revision : ^(ES Revision date)

22/71

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor

Ventilation control measures : Not applicable.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 2: Use in closed batch process (synthesis or formulation)

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 3: Use in batch and other process (synthesis) where opportunity for exposure arises

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 4: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Both hands (960 cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 5: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Dermal exposure: Palm of two hands (480cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 97%.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Contributing scenario controlling worker exposure for 6: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Dermal exposure: Palm of two hands (480cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 90%.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Manufacture of substances

Exposure assessment (environment):	: As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.
Exposure estimation	: Not relevant.

Exposure estimation and reference to its source - Environment: 2: Formulation of preparations

Exposure assessment (environment):	: As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.
Exposure estimation	: Not relevant.

Exposure estimation and reference to its source - Workers: 0: Use in closed process, no likelihood of exposure

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
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METHANOL**Distribution of methanol. Industrial settings.**

Exposure estimation : Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008
 Long term, Systemic, Inhalation: 0.01 mg/m³ . Risk characterisation ratio : 0.00004
 Long term, Systemic, Combined: Risk characterisation ratio : 0.0080
 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008

 Short term, Systemic, Inhalation: 0.05 mg/m³ . Risk characterisation ratio : 0.0082
 Short term, Systemic, Combined: 0.0082

Exposure estimation and reference to its source - Workers: 3: Use in closed, continuous process with occasional controlled exposure

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.

Exposure estimation : Long term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034
 Long term, Systemic, Inhalation: 6.67 mg/m³ . Risk characterisation ratio : 0.026
 Long term, Systemic, Combined: Risk characterisation ratio : 0.060
 Short term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034
 Short term, Systemic, Inhalation: 26.67 mg/m³ . Risk characterisation ratio : 0.103
 Short term, Systemic, Combined: 0.137

Exposure estimation and reference to its source - Workers: 4: Use in closed batch process (synthesis or formulation)

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.

Exposure estimation : Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008
 Long term, Systemic, Inhalation: 13.33 mg/m³ . Risk characterisation ratio : 0.051
 Long term, Systemic, Combined: Risk characterisation ratio : 0.059
 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008

 Short term, Systemic, Inhalation: 53.33mg/m³ . Risk characterisation ratio : 0.205
 Short term, Systemic, Combined: 0.213

Exposure estimation and reference to its source - Workers: 5: Use in batch and other process (synthesis) where opportunity for exposure arises

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.

Exposure estimation : Long term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171
 Long term, Systemic, Inhalation: 13.33 mg/m³ . Risk characterisation ratio : 0.051
 Long term, Systemic, Combined: Risk characterisation ratio : 0.222
 Short term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171
 Short term, Systemic, Inhalation: 53.33mg/m³ . Risk characterisation ratio : 0.205
 Short term, Systemic, Combined: 0.376

Exposure estimation and reference to its source - Workers: 6: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.

Exposure estimation : Long term, Systemic, Dermal: 13.71mg/kg bw/day . Risk characterisation ratio : 0.343
 Long term, Systemic, Inhalation: 33.33mg/m³ . Risk characterisation ratio : 0.128
 Long term, Systemic, Combined: Risk characterisation ratio : 0.471
 Short term, Systemic, Dermal: 13.71mg/kg bw/day . Risk characterisation ratio : 0.343
 Short term, Systemic, Inhalation: 66.67mg/m³ . Risk characterisation ratio : 0.256
 Short term, Systemic, Combined: 0.599

Exposure estimation and reference to its source - Workers: 7: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.

METHANOL***Distribution of methanol. Industrial settings.***

Exposure estimation : Long term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171
 Long term, Systemic, Inhalation: 6.00mg/m³ . Risk characterisation ratio : 0.023
 Long term, Systemic, Combined: Risk characterisation ratio : 0.194
 Short term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171
 Short term, Systemic, Inhalation: 12.00mg/m³ . Risk characterisation ratio : 0.046
 Short term, Systemic, Combined: 0.217

Exposure estimation and reference to its source - Workers: 8: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.

Exposure estimation : Long term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171
 Long term, Systemic, Inhalation: 26.67 mg/m³ . Risk characterisation ratio : 0.103
 Long term, Systemic, Combined: Risk characterisation ratio : 0.274
 Short term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171
 Short term, Systemic, Inhalation: 53.33 mg/m³ . Risk characterisation ratio : 0.205
 Short term, Systemic, Combined: 0.376

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment : Not relevant.
Health : Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
 If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.
 For scaling see <http://www.ecetoc.org/tra>

Additional good practice advice beyond the REACH CSA

Environment : Ensure control measures are regularly inspected and maintained.
Health : Ensure good industrial hygiene. Ensure control measures are regularly inspected and maintained.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : Mono-constituent substance
Product name : METHANOL

Section 1 - Title

Short title of the exposure scenario : Formulation and (re)packing of methanol and mixtures. Industrial settings

List of use descriptors : **Identified use name:** Formulation and (re)packing of substances and mixtures . Industrial settings
Process Category: PROC01, PROC02, PROC03, PROC04, PROC08a, PROC08b, PROC09, PROC15
Substance supplied to that use in form of: As such, In a mixture
Sector of end use: SU03, SU10
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC02
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Formulation of preparations - ERC02**

Health contributing scenarios : **Use in closed process, no likelihood of exposure - PROC01**
Use in closed, continuous process with occasional controlled exposure - PROC02
Use in closed batch process (synthesis or formulation) - PROC03
Use in batch and other process (synthesis) where opportunity for exposure arises - PROC04
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at non-dedicated facilities - PROC08a
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at dedicated facilities - PROC08b
Transfer of substance or preparation into small containers (dedicated filling line, including weighing) - PROC09
Use a laboratory reagent - PROC15

Number of the ES : 3

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 0: Formulation of preparations

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

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Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor

Ventilation control measures : Not applicable.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 2: Use in closed batch process (synthesis or formulation)

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 3: Use in batch and other process (synthesis) where opportunity for exposure arises

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 4: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Both hands (960 cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 5: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 97%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 6: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 7: Use a laboratory reagent

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Section 3 - Exposure estimation and reference to its source

Website:	: Not applicable.
Exposure estimation and reference to its source - Environment: 4: Formulation of preparations	
Exposure assessment (environment):	: As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.
Exposure estimation	: Not relevant.
Exposure estimation and reference to its source - Workers: 0: Use in closed process, no likelihood of exposure	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Long term, Systemic, Inhalation: 0.01 mg/m ³ . Risk characterisation ratio : 0.00004 Long term, Systemic, Combined: Risk characterisation ratio : 0.0080 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Short term, Systemic, Inhalation: 0.05 mg/m ³ . Risk characterisation ratio : 0.0002 Short term, Systemic, Combined: 0.0082
Exposure estimation and reference to its source - Workers: 1: Use in closed, continuous process with occasional controlled exposure	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
Exposure estimation	: Long term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034 Long term, Systemic, Inhalation: 6.67 mg/m ³ . Risk characterisation ratio : 0.026 Long term, Systemic, Combined: Risk characterisation ratio : 0.060 Short term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034 Short term, Systemic, Inhalation: 26.67 mg/m ³ . Risk characterisation ratio : 0.103 Short term, Systemic, Combined: 0.137
Exposure estimation and reference to its source - Workers: 2: Use in closed batch process (synthesis or formulation)	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Long term, Systemic, Inhalation: 13.33 mg/m ³ . Risk characterisation ratio : 0.051 Long term, Systemic, Combined: Risk characterisation ratio : 0.059 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Short term, Systemic, Inhalation: 53.33mg/m ³ . Risk characterisation ratio : 0.205 Short term, Systemic, Combined: 0.213
Exposure estimation and reference to its source - Workers: 3: Use in batch and other process (synthesis) where opportunity for exposure arises	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
Exposure estimation	: Long term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171 Long term, Systemic, Inhalation: 13.33 mg/m ³ . Risk characterisation ratio : 0.051 Long term, Systemic, Combined: Risk characterisation ratio : 0.222 Short term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171 Short term, Systemic, Inhalation: 53.33mg/m ³ . Risk characterisation ratio : 0.205 Short term, Systemic, Combined: 0.376

Exposure estimation and reference to its source - Workers: 5: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
Exposure estimation	: Long term, Systemic, Dermal: 13.71mg/kg bw/day . Risk characterisation ratio : 0.343 Long term, Systemic, Inhalation: 33.33mg/m ³ . Risk characterisation ratio : 0.128 Long term, Systemic, Combined: Risk characterisation ratio : 0.471 Short term, Systemic, Dermal: 13.71mg/kg bw/day . Risk characterisation ratio : 0.343 Short term, Systemic, Inhalation: 66.67mg/m ³ . Risk characterisation ratio : 0.256 Short term, Systemic, Combined: 0.599
Exposure estimation and reference to its source - Workers: 6: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
Exposure estimation	: Long term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171 Long term, Systemic, Inhalation: 6.00mg/m ³ . Risk characterisation ratio : 0.023 Long term, Systemic, Combined: Risk characterisation ratio : 0.194 Short term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171 Short term, Systemic, Inhalation: 12.00mg/m ³ . Risk characterisation ratio : 0.046 Short term, Systemic, Combined: 0.217
Exposure estimation and reference to its source - Workers: 7: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
Exposure estimation	: Long term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171 Long term, Systemic, Inhalation: 26.67 mg/m ³ . Risk characterisation ratio : 0.103 Long term, Systemic, Combined: Risk characterisation ratio : 0.274 Short term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171 Short term, Systemic, Inhalation: 53.33 mg/m ³ . Risk characterisation ratio : 0.205 Short term, Systemic, Combined: 0.376
Exposure estimation and reference to its source - Workers: 8: Use a laboratory reagent	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.009 Long term, Systemic, Inhalation: 6.67mg/m ³ . Risk characterisation ratio :0.026 Long term, Systemic, Combined: Risk characterisation ratio : 0.035 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.009 Short term, Systemic, Inhalation: 13.33mg/m ³ . Risk characterisation ratio : 0.051 Short term, Systemic, Combined: 0.060

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Not relevant.
Health	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For scaling see http://www.ecetoc.org/tra

Additional good practice advice beyond the REACH CSA

Environment	: Ensure control measures are regularly inspected and maintained.
Health	: Ensure good industrial hygiene. Ensure control measures are regularly inspected and maintained.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : Mono-constituent substance
Product name : METHANOL

Section 1 - Title

Short title of the exposure scenario : Industrial use of methanol as a waste water treatment chemical

List of use descriptors : **Identified use name:** Waste water treatment: Industrial settings
Process Category: PROC02
Substance supplied to that use in form of: As such, In a mixture
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC09b
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Wide dispersive outdoor use of substances in closed systems - ERC09b**

Health contributing scenarios : **Use in closed, continuous process with occasional controlled exposure - PROC02**

Number of the ES : 10

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 0: Wide dispersive outdoor use of substances in closed systems

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling worker exposure for 0: Use in closed, continuous process with occasional controlled exposure

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Date of issue/Date of revision : ^(ES Revision date)

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Section 3 - Exposure estimation and reference to its source

Website:	: Not applicable.
Exposure estimation and reference to its source - Environment: 1: Wide dispersive outdoor use of substances in closed systems	
Exposure assessment (environment):	: As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.
Exposure estimation	: Not relevant.
Exposure estimation and reference to its source - Workers: 0: Use in closed, continuous process with occasional controlled exposure	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034 Long term, Systemic, Inhalation: 6.67 mg/m ³ . Risk characterisation ratio : 0.026 Long term, Systemic, Combined: Risk characterisation ratio : 0.060 Short term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034 Short term, Systemic, Inhalation: 26.67 mg/m ³ . Risk characterisation ratio : 0.103 Short term, Systemic, Combined: 0.137

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Not relevant.
Health	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For scaling see http://www.ecetoc.org/tra

Additional good practice advice beyond the REACH CSA

Environment	: Ensure control measures are regularly inspected and maintained.
Health	: Ensure good industrial hygiene. Ensure control measures are regularly inspected and maintained.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : Mono-constituent substance
Product name : METHANOL

Section 1 - Title

Short title of the exposure scenario : Industrial use of methanol in cleaning agents

List of use descriptors : **Identified use name:** Use in cleaning agents . Industrial settings
Process Category: PROC01, PROC02, PROC03, PROC04, PROC07, PROC08a, PROC08b, PROC10, PROC13
Substance supplied to that use in form of: As such, In a mixture
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC04
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Industrial use of processing aids in processes and products, not becoming part of articles - ERC04**

Health contributing scenarios : **Use in closed process, no likelihood of exposure - PROC01**
Use in closed, continuous process with occasional controlled exposure - PROC02
Use in closed batch process (synthesis or formulation) - PROC03
Use in batch and other process (synthesis) where opportunity for exposure arises - PROC04
Spraying in industrial settings and applications - PROC07
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at non-dedicated facilities - PROC08a
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at dedicated facilities - PROC08b
Roller application or brushing of adhesive and other coating - PROC10
Treatment of articles by dipping and pouring - PROC13

Number of the ES : 6

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 0: Industrial use of processing aids in processes and products, not becoming part of articles

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

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Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor

Ventilation control measures : Not applicable.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 2: Use in closed batch process (synthesis or formulation)

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 3: Use in batch and other process (synthesis) where opportunity for exposure arises

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene**Contributing scenario controlling worker exposure for 4: Spraying in industrial settings and applications**

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : 8 h (full shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor Room size: > 1000 m³

Technical conditions and measures to control dispersion from source towards the worker : Worker is not within one metre from the source.
Work in spray cabinet without specific ventilation system.

Ventilation control measures : Not applicable.

Organisational measures to prevent/limit releases, dispersion and exposure : Clean equipment and the work area every day.
Ensure control measures are regularly inspected and maintained.

Conditions and measures related to personal protection and hygiene**Contributing scenario controlling worker exposure for 5: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities**

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Dermal exposure: Both hands (960 cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 90%.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Contributing scenario controlling worker exposure for 6: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Dermal exposure: Palm of two hands (480cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 97%.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Contributing scenario controlling worker exposure for 7: Roller application or brushing of adhesive and other coating

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 80%.
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Dermal exposure: Both hands (960 cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 8: Treatment of articles by dipping and pouring

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 2: Industrial use of processing aids in processes and products, not becoming part of articles

Exposure assessment (environment): : As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Exposure estimation : Not relevant.

Exposure estimation and reference to its source - Workers: 0: Use in closed process, no likelihood of exposure

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008
Long term, Systemic, Inhalation: 0.01 mg/m³ . Risk characterisation ratio : 0.00004
Long term, Systemic, Combined: Risk characterisation ratio : 0.0080
Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008

Short term, Systemic, Inhalation: 0.05 mg/m³ . Risk characterisation ratio : 0.0002
Short term, Systemic, Combined: 0.0082

Exposure estimation and reference to its source - Workers: 1: Use in closed, continuous process with occasional controlled exposure

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034
 Long term, Systemic, Inhalation: 6.67 mg/m³ . Risk characterisation ratio : 0.026
 Long term, Systemic, Combined: Risk characterisation ratio : 0.060
 Short term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034
 Short term, Systemic, Inhalation: 26.67 mg/m³ . Risk characterisation ratio : 0.103
 Short term, Systemic, Combined: 0.137

Exposure estimation and reference to its source - Workers: 3: Use in closed batch process (synthesis or formulation)

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
 The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008
 Long term, Systemic, Inhalation: 13.33 mg/m³ . Risk characterisation ratio : 0.051
 Long term, Systemic, Combined: Risk characterisation ratio : 0.059
 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008
 Short term, Systemic, Inhalation: 53.33mg/m³ . Risk characterisation ratio : 0.205
 Short term, Systemic, Combined: 0.213

Exposure estimation and reference to its source - Workers: 4: Use in batch and other process (synthesis) where opportunity for exposure arises

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
 The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 6.86 mg/kg bw/day . Risk characterisation ratio : 0.171
 Long term, Systemic, Inhalation: 13.33 mg/m³ . Risk characterisation ratio : 0.051
 Long term, Systemic, Combined: Risk characterisation ratio : 0.222
 Short term, Systemic, Dermal: 6.86 mg/kg bw/day . Risk characterisation ratio : 0.171
 Short term, Systemic, Inhalation: 53.33 mg/m³ . Risk characterisation ratio : 0.205
 Short term, Systemic, Combined: 0.376

Exposure estimation and reference to its source - Workers: 5: Spraying in industrial settings and applications

Exposure assessment (human): : Stoffenmanager v3.5

Exposure estimation : Long term, Systemic, Inhalation: 141.1 mg/m³ . Risk characterisation ratio : 0.542
 Short term, Systemic, Inhalation: 141.1 mg/m³ . Risk characterisation ratio : 0.542

Exposure estimation and reference to its source - Workers: 6: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
 The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 13.71mg/kg bw/day . Risk characterisation ratio : 0.343
 Long term, Systemic, Inhalation: 33.33mg/m³ . Risk characterisation ratio : 0.128
 Long term, Systemic, Combined: Risk characterisation ratio : 0.471
 Short term, Systemic, Dermal: 13.71mg/kg bw/day . Risk characterisation ratio : 0.343
 Short term, Systemic, Inhalation: 66.67mg/m³ . Risk characterisation ratio : 0.256
 Short term, Systemic, Combined: 0.599

Exposure estimation and reference to its source - Workers: 7: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
 The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171
 Long term, Systemic, Inhalation: 6.00mg/m³ . Risk characterisation ratio : 0.023
 Long term, Systemic, Combined: Risk characterisation ratio : 0.194
 Short term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171
 Short term, Systemic, Inhalation: 12.00mg/m³ . Risk characterisation ratio : 0.046
 Short term, Systemic, Combined: 0.217

Exposure estimation and reference to its source - Workers: 8: Roller application or brushing of adhesive and other coating

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 21.94 mg/kg bw/day . Risk characterisation ratio : 0.549 Long term, Systemic, Inhalation: 26.67 mg/m ³ . Risk characterisation ratio : 0.103 Long term, Systemic, Combined: Risk characterisation ratio : 0.652 Short term, Systemic, Dermal: 21.94 mg/kg bw/day . Risk characterisation ratio : 0.549 Short term, Systemic, Inhalation: 53.33 mg/m ³ . Risk characterisation ratio : 0.205 Short term, Systemic, Combined: 0.754

Exposure estimation and reference to its source - Workers: 9: Treatment of articles by dipping and pouring

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 13.71 mg/kg bw/day . Risk characterisation ratio : 0.373 Long term, Systemic, Inhalation: 33.33 mg/m ³ . Risk characterisation ratio : 0.128 Long term, Systemic, Combined: Risk characterisation ratio : 0.471 Short term, Systemic, Dermal: 13.71 mg/kg bw/day . Risk characterisation ratio : 0.343 Short term, Systemic, Inhalation: 66.67 mg/m ³ . Risk characterisation ratio : 0.256 Short term, Systemic, Combined: 0.600

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Not relevant.
Health	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For scaling see http://www.ecetoc.org/tra or http://stoffenmanager.codeplex.com/

Additional good practice advice beyond the REACH CSA

Environment	: Ensure control measures are regularly inspected and maintained.
Health	: Ensure good industrial hygiene. Ensure control measures are regularly inspected and maintained.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : Mono-constituent substance
Product name : METHANOL

Section 1 - Title

Short title of the exposure scenario : Industrial use of methanol as a laboratory reagent

List of use descriptors : **Identified use name:** Use in laboratories . Industrial settings
Process Category: PROC10, PROC15
Substance supplied to that use in form of: As such, In a mixture
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC04
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Industrial use of processing aids in processes and products, not becoming part of articles - ERC04**

Health contributing scenarios : **Roller application or brushing of adhesive and other coating - PROC10**
Use a laboratory reagent - PROC15

Number of the ES : 8

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 0: Industrial use of processing aids in processes and products, not becoming part of articles

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling worker exposure for 0: Roller application or brushing of adhesive and other coating

Concentration of substance in mixture or article : Covers percentage substance in the product up to 80%.

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Both hands (960 cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

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Contributing scenario controlling worker exposure for 1: Use a laboratory reagent

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Dermal exposure: Palm of one hand (240cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 90%.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 2: Industrial use of processing aids in processes and products, not becoming part of articles

Exposure assessment (environment):	: As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.
Exposure estimation	: Not relevant.

Exposure estimation and reference to its source - Workers: 0: Roller application or brushing of adhesive and other coating

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 21.94 mg/kg bw/day . Risk characterisation ratio : 0.549 Long term, Systemic, Inhalation: 26.67 mg/m ³ . Risk characterisation ratio : 0.103 Long term, Systemic, Combined: Risk characterisation ratio : 0.652 Short term, Systemic, Dermal: 21.94 mg/kg bw/day . Risk characterisation ratio : 0.549 Short term, Systemic, Inhalation: 53.33 mg/m ³ . Risk characterisation ratio : 0.205 Short term, Systemic, Combined: 0.754

Exposure estimation and reference to its source - Workers: 1: Use a laboratory reagent

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.009 Long term, Systemic, Inhalation: 6.67mg/m ³ . Risk characterisation ratio :0.026 Long term, Systemic, Combined: Risk characterisation ratio : 0.035 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.009 Short term, Systemic, Inhalation: 13.33mg/m ³ . Risk characterisation ratio : 0.051 Short term, Systemic, Combined: 0.060

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Not relevant.
Health	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For scaling see http://www.ecetoc.org/tra or http://stoffmanager.codeplex.com/

Additional good practice advice beyond the REACH CSA

Environment	: Ensure control measures are regularly inspected and maintained.
Health	: Ensure good industrial hygiene. Ensure control measures are regularly inspected and maintained.

Annex to the extended Safety Data Sheet (eSDS)

Industrial

Identification of the substance or mixture

Product definition : Mono-constituent substance
Product name : METHANOL

Section 1 - Title

Short title of the exposure scenario : Industrial use of methanol as fuel.

List of use descriptors : **Identified use name:** Use as a fuel . Industrial settings
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC16, PROC19
Substance supplied to that use in form of: As such, In a mixture
Sector of end use: SU03
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08b
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Wide dispersive indoor use of reactive substances in open systems - ERC08b**

Health contributing scenarios : **Use in closed process, no likelihood of exposure - PROC01**
Use in closed, continuous process with occasional controlled exposure - PROC02
Use in closed batch process (synthesis or formulation) - PROC03
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at non-dedicated facilities - PROC08a
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at dedicated facilities - PROC08b
Using material as fuel sources, limited exposure to unburned product to be expected - PROC16
Hand-mixing with intimate contact and only PPE available - PROC19

Number of the ES : 4

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 0: Wide dispersive indoor use of reactive substances in open systems

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

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METHANOL*Industrial use of methanol as fuel.*

Area of use: : Indoor

Ventilation control measures : Not applicable.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 2: Use in closed batch process (synthesis or formulation)

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 3: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Dermal exposure: Both hands (960 cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 90%.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Contributing scenario controlling worker exposure for 4: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year
Human factors not influenced by risk management	: Dermal exposure: Palm of two hands (480cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 97%.
Organisational measures to prevent/limit releases, dispersion and exposure	: Not relevant.
Conditions and measures related to personal protection and hygiene	

Contributing scenario controlling worker exposure for 5: Using material as fuel sources, limited exposure to unburned product to be expected

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). ≤ 240 days/year

METHANOL**Industrial use of methanol as fuel.**

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor

Ventilation control measures : Not applicable.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Contributing scenario controlling worker exposure for 6: Hand-mixing with intimate contact and only PPE available

Concentration of substance in mixture or article : Limit the substance in product to 10%.

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : < 4 h (half shift). ≤ 240 days/year

Human factors not influenced by risk management : Dermal exposure: Two hands and forearms (1980 cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 90%.

Organisational measures to prevent/limit releases, dispersion and exposure : Not relevant.

Conditions and measures related to personal protection and hygiene

Personal protection : Wear suitable gloves tested to EN374.

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 1: Wide dispersive indoor use of reactive substances in open systems

Exposure assessment (environment): : As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Exposure estimation : Not relevant.

Exposure estimation and reference to its source - Workers: 0: Use in closed process, no likelihood of exposure

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008
Long term, Systemic, Inhalation: 0.01 mg/m³ . Risk characterisation ratio : 0.00004
Long term, Systemic, Combined: Risk characterisation ratio : 0.0080
Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008

Short term, Systemic, Inhalation: 0.05 mg/m³ . Risk characterisation ratio : 0.0002
Short term, Systemic, Combined: 0.0082

Exposure estimation and reference to its source - Workers: 2: Use in closed, continuous process with occasional controlled exposure

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034 Long term, Systemic, Inhalation: 6.67 mg/m ³ . Risk characterisation ratio : 0.026 Long term, Systemic, Combined: Risk characterisation ratio : 0.060 Short term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034 Short term, Systemic, Inhalation: 26.67 mg/m ³ . Risk characterisation ratio : 0.103 Short term, Systemic, Combined: 0.137

Exposure estimation and reference to its source - Workers: 3: Use in closed batch process (synthesis or formulation)

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Long term, Systemic, Inhalation: 13.33 mg/m ³ . Risk characterisation ratio : 0.051 Long term, Systemic, Combined: Risk characterisation ratio : 0.059 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Short term, Systemic, Inhalation: 53.33mg/m ³ . Risk characterisation ratio : 0.205 Short term, Systemic, Combined: 0.213

Exposure estimation and reference to its source - Workers: 4: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 13.71mg/kg bw/day . Risk characterisation ratio : 0.343 Long term, Systemic, Inhalation: 33.33mg/m ³ . Risk characterisation ratio : 0.128 Long term, Systemic, Combined: Risk characterisation ratio : 0.471 Short term, Systemic, Dermal: 13.71mg/kg bw/day . Risk characterisation ratio : 0.343 Short term, Systemic, Inhalation: 66.67mg/m ³ . Risk characterisation ratio : 0.256 Short term, Systemic, Combined: 0.599

Exposure estimation and reference to its source - Workers: 5: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171 Long term, Systemic, Inhalation: 6.00mg/m ³ . Risk characterisation ratio : 0.023 Long term, Systemic, Combined: Risk characterisation ratio : 0.194 Short term, Systemic, Dermal: 6.86mg/kg bw/day . Risk characterisation ratio : 0.171 Short term, Systemic, Inhalation: 12.00mg/m ³ . Risk characterisation ratio : 0.046 Short term, Systemic, Combined: 0.217

Exposure estimation and reference to its source - Workers: 6: Using material as fuel sources, limited exposure to unburned product to be expected

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Long term, Systemic, Inhalation: 33.33 mg/m ³ . Risk characterisation ratio : 0.128 Long term, Systemic, Combined: Risk characterisation ratio : 0.136 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Short term, Systemic, Inhalation: 66.67mg/m ³ . Risk characterisation ratio : 0.256 Short term, Systemic, Combined: 0.264

Exposure estimation and reference to its source - Workers: 7: Hand-mixing with intimate contact and only PPE available

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 14.14mg/kg bw/day . Risk characterisation ratio : 0.354 Long term, Systemic, Inhalation: 20.00mg/m ³ . Risk characterisation ratio : 0.077 Long term, Systemic, Combined: Risk characterisation ratio : 0.431 Short term, Systemic, Dermal: 14.14mg/kg bw/day . Risk characterisation ratio : 0.354 Short term, Systemic, Inhalation:40.00mg/m ³ . Risk characterisation ratio : 0.154 Short term, Systemic, Combined: 0.508

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Not relevant.
Health	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For scaling see http://www.ecetoc.org/tra

Additional good practice advice beyond the REACH CSA

Environment	: Ensure control measures are regularly inspected and maintained.
Health	: Ensure good industrial hygiene. Ensure control measures are regularly inspected and maintained.

Annex to the extended Safety Data Sheet (eSDS)

Professional

Identification of the substance or mixture

Product definition : Mono-constituent substance
Product name : METHANOL

Section 1 - Title

Short title of the exposure scenario : Professional use of methanol as fuel

List of use descriptors : **Identified use name:** Use as a fuel . Professional settings
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC16, PROC19
Substance supplied to that use in form of: As such, In a mixture
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08b, ERC08e
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Wide dispersive indoor use of reactive substances in open systems** - ERC08b
Wide dispersive outdoor use of reactive substances in open systems - ERC08e

Health contributing scenarios : **Use in closed process, no likelihood of exposure** - PROC01
Use in closed, continuous process with occasional controlled exposure - PROC02
Use in closed batch process (synthesis or formulation) - PROC03
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at non-dedicated facilities - PROC08a
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at dedicated facilities - PROC08b
Using material as fuel sources, limited exposure to unburned product to be expected - PROC16
Hand-mixing with intimate contact and only PPE available - PROC19

Number of the ES : 5

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 0: Wide dispersive indoor use of reactive substances in open systems

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling environmental exposure for 1: Wide dispersive outdoor use of reactive substances in open systems

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

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Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor

Ventilation control measures : Not applicable.

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 80%.

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 2: Use in closed batch process (synthesis or formulation)

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 80%.

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 3: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Concentration of substance in mixture or article : Covers percentage substance in the product up to 5%.

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Both hands (960 cm²)

Area of use: : Indoor

Ventilation control measures : Not applicable.

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 4: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Concentration of substance in mixture or article : Covers percentage substance in the product up to 5%.

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Not applicable.

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 5: Using material as fuel sources, limited exposure to unburned product to be expected

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use:	: Indoor
Ventilation control measures	: Not applicable.
Conditions and measures related to personal protection and hygiene	
Respiratory protection	: Not applicable.

Contributing scenario controlling worker exposure for 6: Hand-mixing with intimate contact and only PPE available

Concentration of substance in mixture or article	: Limit the substance in product to 10%.
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: < 4 h (half shift). 5 workdays/week.
Human factors not influenced by risk management	: Dermal exposure: Two hands and forearms (1980 cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 80%.
Conditions and measures related to personal protection and hygiene	
Personal protection	: Wear suitable gloves tested to EN374.
Respiratory protection	: Not applicable.

Section 3 - Exposure estimation and reference to its source

Website:	: Not applicable.
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Exposure estimation and reference to its source - Environment: 1: Wide dispersive indoor use of reactive substances in open systems

Exposure assessment (environment):	: As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.
Exposure estimation	: Not relevant.

Exposure estimation and reference to its source - Environment: 2: Wide dispersive outdoor use of reactive substances in open systems

Exposure assessment (environment):	: As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.
Exposure estimation	: Not relevant.

Exposure estimation and reference to its source - Workers: 0: Use in closed process, no likelihood of exposure

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Long term, Systemic, Inhalation: 0.13mg/m ³ . Risk characterisation ratio : 0.0005 Long term, Systemic, Combined: Risk characterisation ratio : 0.009 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Short term, Systemic, Inhalation: 0.53mg/m ³ . Risk characterisation ratio : 0.002 Short term, Systemic, Combined: 0.010

Exposure estimation and reference to its source - Workers: 3: Use in closed, continuous process with occasional controlled exposure

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 1.37mg/kg bw/day . Risk characterisation ratio : 0.034 Long term, Systemic, Inhalation: 13.33 mg/m ³ . Risk characterisation ratio : 0.051 Long term, Systemic, Combined: Risk characterisation ratio : 0.085 Short term, Systemic, Dermal: 1.37mg/kg bw/day . Risk characterisation ratio : 0.034 Short term, Systemic, Inhalation: 53.33mg/m ³ . Risk characterisation ratio : 0.205 Short term, Systemic, Combined: 0.239

Exposure estimation and reference to its source - Workers: 4: Use in closed batch process (synthesis or formulation)

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Long term, Systemic, Inhalation: 26.67mg/m ³ . Risk characterisation ratio : 0.103 Long term, Systemic, Combined: Risk characterisation ratio : 0.111 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Short term, Systemic, Inhalation: 106.67mg/m ³ . Risk characterisation ratio : 0.410 Short term, Systemic, Combined: 0.418

Exposure estimation and reference to its source - Workers: 5: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 0.68 mg/kg bw/day . Risk characterisation ratio : 0.017 Long term, Systemic, Inhalation: 33.33 mg/m ³ . Risk characterisation ratio : 0.128 Long term, Systemic, Combined: Risk characterisation ratio : 0.145 Short term, Systemic, Dermal: 0.68 mg/kg bw/day . Risk characterisation ratio : 0.017 Short term, Systemic, Inhalation: 66.67 mg/m ³ . Risk characterisation ratio : 0.256 Short term, Systemic, Combined: 0.274

Exposure estimation and reference to its source - Workers: 6: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Long term, Systemic, Inhalation: 16.67 mg/m ³ . Risk characterisation ratio : 0.064 Long term, Systemic, Combined: Risk characterisation ratio : 0.072 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Short term, Systemic, Inhalation: 33.33 mg/m ³ . Risk characterisation ratio : 0.128 Short term, Systemic, Combined: 0.213

Exposure estimation and reference to its source - Workers: 7: Using material as fuel sources, limited exposure to unburned product to be expected

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.009 Long term, Systemic, Inhalation: 66.67 mg/m ³ . Risk characterisation ratio : 0.256 Long term, Systemic, Combined: Risk characterisation ratio : 0.165 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.009 Short term, Systemic, Inhalation: 133.34 mg/m ³ . Risk characterisation ratio : 0.513 Short term, Systemic, Combined: 0.522

Exposure estimation and reference to its source - Workers: 8: Hand-mixing with intimate contact and only PPE available

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 14.14mg/kg bw/day . Risk characterisation ratio : 0.354 Long term, Systemic, Inhalation: 40.00 mg/m ³ . Risk characterisation ratio : 0.154 Long term, Systemic, Combined: Risk characterisation ratio : 0.505 Short term, Systemic, Dermal: 14.14 mg/kg bw/day . Risk characterisation ratio : 0.354 Short term, Systemic, Inhalation: 80.00mg/m ³ . Risk characterisation ratio : 0.308 Short term, Systemic, Combined: 0.662

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Not relevant.
Health	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For scaling see http://www.ecetoc.org/tra

Additional good practice advice beyond the REACH CSA

Environment	: Ensure control measures are regularly inspected and maintained.
Health	: Ensure good industrial hygiene. Ensure control measures are regularly inspected and maintained.

Annex to the extended Safety Data Sheet (eSDS)

Professional

Identification of the substance or mixture

Product definition : Mono-constituent substance
Product name : METHANOL

Section 1 - Title

Short title of the exposure scenario : Professional use of methanol in cleaning agents

List of use descriptors : **Identified use name:** Use in cleaning agents . Professional use
Process Category: PROC01, PROC02, PROC03, PROC08a, PROC08b, PROC10, PROC11, PROC13, PROC04
Substance supplied to that use in form of: As such, In a mixture
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08a, ERC08d
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Wide dispersive indoor use of processing aids in open systems** - ERC08a
Wide dispersive outdoor use of processing aids in open systems - ERC08d

Health contributing scenarios : **Use in closed process, no likelihood of exposure** - PROC01
Use in closed, continuous process with occasional controlled exposure - PROC02
Use in closed batch process (synthesis or formulation) - PROC03
Use in batch and other process (synthesis) where opportunity for exposure arises - PROC04
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at non-dedicated facilities - PROC08a
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at dedicated facilities - PROC08b
Roller application or brushing of adhesive and other coating - PROC10
Spraying outside industrial settings and/or applications - PROC11
Treatment of articles by dipping and pouring - PROC13

Number of the ES : 7

Section 2 - Exposure controls

<p>Contributing scenario controlling environmental exposure for 0: Wide dispersive indoor use of processing aids in open systems</p>

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

<p>Contributing scenario controlling environmental exposure for 1: Wide dispersive outdoor use of processing aids in open systems</p>
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As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling worker exposure for 0: Use in closed process, no likelihood of exposure

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor

Ventilation control measures : Not applicable.

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 1: Use in closed, continuous process with occasional controlled exposure

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 80%.

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 2: Use in closed batch process (synthesis or formulation)

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Palm of one hand (240cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 80%.

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 3: Use in batch and other process (synthesis) where opportunity for exposure arises

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : < 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Palm of two hands (480cm²)

Area of use: : Indoor

Ventilation control measures : Local exhaust ventilation with an efficacy of 80%.

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 4: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Concentration of substance in mixture or article : Covers percentage substance in the product up to 5%.

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Both hands (960 cm²)

Area of use: : Indoor

Ventilation control measures : Not applicable.

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 5: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Concentration of substance in mixture or article : Covers percentage substance in the product up to 5%.

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use	: > 4 h (half shift). 5 workdays/week.
Human factors not influenced by risk management	: Dermal exposure: Palm of two hands (480cm ²)
Area of use:	: Indoor
Ventilation control measures	: Not applicable.
Conditions and measures related to personal protection and hygiene	
Respiratory protection	: Not applicable.

Contributing scenario controlling worker exposure for 6: Roller application or brushing of adhesive and other coating

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 5%.
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). 5 workdays/week.
Human factors not influenced by risk management	: Dermal exposure: Both hands (960 cm ²)
Area of use:	: Indoor
Conditions and measures related to personal protection and hygiene	
Respiratory protection	: Not applicable.

Contributing scenario controlling worker exposure for 7: Spraying outside industrial settings and/or applications

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 3%.
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: per shift: 200 minute(s) . 5 workdays/week.
Human factors not influenced by risk management	: Both hands (960 cm ²)
Area of use:	: Indoor Room size: 100 - 1000 m ³
Technical conditions and measures to control dispersion from source towards the worker	: Worker is not within one metre from the source.
Conditions and measures related to personal protection and hygiene	
Personal protection	: Wear suitable gloves tested to EN374.
Respiratory protection	: Not applicable.

Contributing scenario controlling worker exposure for 8: Treatment of articles by dipping and pouring

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). 5 workdays/week.
Human factors not influenced by risk management	: Palm of two hands (480cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 80%.
Conditions and measures related to personal protection and hygiene	
Respiratory protection	: Not applicable.

Section 3 - Exposure estimation and reference to its source

Website:	: Not applicable.
Exposure estimation and reference to its source - Environment: 2: Wide dispersive indoor use of processing aids in open systems	
Exposure assessment (environment):	: As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.
Exposure estimation	: Not relevant.
Exposure estimation and reference to its source - Environment: 3: Wide dispersive outdoor use of processing aids in open systems	
Exposure assessment (environment):	: As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.
Exposure estimation	: Not relevant.
Exposure estimation and reference to its source - Workers: 0: Use in closed process, no likelihood of exposure	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Long term, Systemic, Inhalation: 0.13mg/m ³ . Risk characterisation ratio : 0.0005 Long term, Systemic, Combined: Risk characterisation ratio : 0.009 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Short term, Systemic, Inhalation: 0.53 mg/m ³ . Risk characterisation ratio : 0.002 Short term, Systemic, Combined: 0.010
Exposure estimation and reference to its source - Workers: 1: Use in closed, continuous process with occasional controlled exposure	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Date of issue/Date of revision	: ^ (ES Revision date)

METHANOL**Professional use of methanol in cleaning agents**

Exposure estimation : Long term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034
 Long term, Systemic, Inhalation: 13.33 mg/m³ . Risk characterisation ratio : 0.051
 Long term, Systemic, Combined: Risk characterisation ratio : 0.086
 Short term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034
 Short term, Systemic, Inhalation: 53.33 mg/m³ . Risk characterisation ratio : 0.205
 Short term, Systemic, Combined: 0.239

Exposure estimation and reference to its source - Workers: 4: Use in closed batch process (synthesis or formulation)

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
 The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.0008
 Long term, Systemic, Inhalation: 26.67 mg/m³ . Risk characterisation ratio : 0.103
 Long term, Systemic, Combined: Risk characterisation ratio : 0.111
 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.0008
 Short term, Systemic, Inhalation: 106.67 mg/m³ . Risk characterisation ratio : 0.410
 Short term, Systemic, Combined: 0.419

Exposure estimation and reference to its source - Workers: 5: Use in batch and other process (synthesis) where opportunity for exposure arises

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
 The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 6.86 mg/kg bw/day . Risk characterisation ratio : 0.171
 Long term, Systemic, Inhalation: 40.00 mg/m³ . Risk characterisation ratio : 0.154
 Long term, Systemic, Combined: Risk characterisation ratio : 0.325
 Short term, Systemic, Dermal: 6.86 mg/kg bw/day . Risk characterisation ratio : 0.171
 Short term, Systemic, Inhalation: 160.00 mg/m³ . Risk characterisation ratio : 0.615
 Short term, Systemic, Combined: 0.786

Exposure estimation and reference to its source - Workers: 6: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
 The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 0.68 mg/kg bw/day . Risk characterisation ratio : 0.017
 Long term, Systemic, Inhalation: 33.33 mg/m³ . Risk characterisation ratio : 0.128
 Long term, Systemic, Combined: Risk characterisation ratio : 0.145
 Short term, Systemic, Dermal: 0.68 mg/kg bw/day . Risk characterisation ratio : 0.017
 Short term, Systemic, Inhalation: 66.67 mg/m³ . Risk characterisation ratio : 0.256
 Short term, Systemic, Combined: 0.273

Exposure estimation and reference to its source - Workers: 7: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
 Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
 The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008
 Long term, Systemic, Inhalation: 16.67 mg/m³ . Risk characterisation ratio : 0.064
 Long term, Systemic, Combined: Risk characterisation ratio : 0.073
 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008
 Short term, Systemic, Inhalation: 33.33 mg/m³ . Risk characterisation ratio : 0.128
 Short term, Systemic, Combined: 0.137

Exposure estimation and reference to its source - Workers: 8: Roller application or brushing of adhesive and other coating

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034 Long term, Systemic, Inhalation: 33.33 mg/m ³ . Risk characterisation ratio : 0.128 Long term, Systemic, Combined: Risk characterisation ratio : 0.162 Short term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034 Short term, Systemic, Inhalation: 66.67 mg/m ³ . Risk characterisation ratio : 0.256 Short term, Systemic, Combined: 0.290

Exposure estimation and reference to its source - Workers: 9: Spraying outside industrial settings and/or applications

Exposure assessment (human):	: Stoffenmanager v3.5 . Riskofderm v2.1
Exposure estimation	: Long term, Systemic, Dermal: 7.24 mg/kg bw/day . Risk characterisation ratio : 0.181 Long term, Systemic, Inhalation: 134.1 mg/m ³ . Risk characterisation ratio : 0.516 Long term, Systemic, Combined: Risk characterisation ratio : 0.697 Short term, Systemic, Dermal: 7.24 mg/kg bw/day . Risk characterisation ratio : 0.181 Short term, Systemic, Inhalation: 134.1 mg/m ³ . Risk characterisation ratio : 0.516 Short term, Systemic, Combined: 0.697

Exposure estimation and reference to its source - Workers: 10: Treatment of articles by dipping and pouring

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 13.71 mg/kg bw/day . Risk characterisation ratio : 0.343 Long term, Systemic, Inhalation: 66.67 mg/m ³ . Risk characterisation ratio : 0.256 Long term, Systemic, Combined: Risk characterisation ratio : 0.600 Short term, Systemic, Dermal: 13.71 mg/kg bw/day . Risk characterisation ratio : 0.343 Short term, Systemic, Inhalation: 133.33 mg/m ³ . Risk characterisation ratio : 0.513 Short term, Systemic, Combined: 0.856

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Not relevant.
Health	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For scaling see http://www.ecetoc.org/tra and http://stoffenmanager.codeplex.com/

Additional good practice advice beyond the REACH CSA

Environment	: Ensure control measures are regularly inspected and maintained.
Health	: Ensure good industrial hygiene. Ensure control measures are regularly inspected and maintained.

Annex to the extended Safety Data Sheet (eSDS)

Professional

Identification of the substance or mixture

Product definition : Mono-constituent substance
Product name : METHANOL

Section 1 - Title

Short title of the exposure scenario : Professional use of methanol in oilfield drilling and production operations

List of use descriptors : **Identified use name:** Use in oil and gas field drilling and production operations .
 Professional settings
Process Category: PROC04, PROC05, PROC08a, PROC08b
Substance supplied to that use in form of: As such, In a mixture
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC09b
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Wide dispersive outdoor use of substances in closed systems - ERC09b**

Health contributing scenarios : **Use in batch and other process (synthesis) where opportunity for exposure arises - PROC04**
Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) - PROC05
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at non-dedicated facilities - PROC08a
Transfer of substance or preparation (charging/discharging) from/to vessels/ large containers at dedicated facilities - PROC08b

Number of the ES : 11

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 0: Wide dispersive outdoor use of substances in closed systems

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling worker exposure for 0: Use in batch and other process (synthesis) where opportunity for exposure arises

Concentration of substance in mixture or article : Covers percentage substance in the product up to 100%

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : < 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Palm of two hands (480cm²)

Area of use: : Indoor

Date of issue/Date of revision : ^(ES Revision date)

65/71

Ventilation control measures : Local exhaust ventilation with an efficacy of 80%.

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 1: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

Concentration of substance in mixture or article : Covers percentage substance in the product up to 5%.

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Palm of two hands (480cm²)

Area of use: : Indoor

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 2: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Concentration of substance in mixture or article : Covers percentage substance in the product up to 5%.

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Both hands (960 cm²)

Area of use: : Indoor

Ventilation control measures : Not applicable.

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 3: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

Concentration of substance in mixture or article : Covers percentage substance in the product up to 5%.

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management	: Dermal exposure: Palm of two hands (480cm ²)
Area of use:	: Indoor
Ventilation control measures	: Not applicable.
Conditions and measures related to personal protection and hygiene	
Respiratory protection	: Not applicable.

Section 3 - Exposure estimation and reference to its source

Website: : Not applicable.

Exposure estimation and reference to its source - Environment: 3: Wide dispersive outdoor use of substances in closed systems

Exposure assessment (environment): : As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Exposure estimation : Not relevant.

Exposure estimation and reference to its source - Workers: 0: Use in batch and other process (synthesis) where opportunity for exposure arises

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 6.86 mg/kg bw/day . Risk characterisation ratio : 0.171
Long term, Systemic, Inhalation: 40.00 mg/m³ . Risk characterisation ratio : 0.154
Long term, Systemic, Combined: Risk characterisation ratio : 0.325
Short term, Systemic, Dermal: 6.86 mg/kg bw/day . Risk characterisation ratio : 0.171
Short term, Systemic, Inhalation: 160.00 mg/m³ . Risk characterisation ratio : 0.615
Short term, Systemic, Combined: 0.786

Exposure estimation and reference to its source - Workers: 1: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 0.68 mg/kg bw/day . Risk characterisation ratio : 0.017
Long term, Systemic, Inhalation: 33.33 mg/m³ . Risk characterisation ratio : 0.128
Long term, Systemic, Combined: Risk characterisation ratio : 0.145
Short term, Systemic, Dermal: 0.68 mg/kg bw/day . Risk characterisation ratio : 0.017
Short term, Systemic, Inhalation: 66.67 mg/m³ . Risk characterisation ratio : 0.256
Short term, Systemic, Combined: 0.273

Exposure estimation and reference to its source - Workers: 2: Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non-dedicated facilities

Exposure assessment (human): : ECETOC TRA workers (v2.0) modified
Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure.
The concentration of the substance has been considered using a linear approach.

Exposure estimation : Long term, Systemic, Dermal: 0.68 mg/kg bw/day . Risk characterisation ratio : 0.017
Long term, Systemic, Inhalation: 33.33 mg/m³ . Risk characterisation ratio : 0.128
Long term, Systemic, Combined: Risk characterisation ratio : 0.145
Short term, Systemic, Dermal: 0.68 mg/kg bw/day . Risk characterisation ratio : 0.017
Short term, Systemic, Inhalation: 66.67 mg/m³ . Risk characterisation ratio : 0.256
Short term, Systemic, Combined: 0.274

Exposure estimation and reference to its source - Workers: 4: Transfer of substance or preparation (charging/ discharging) from/to vessels/large containers at dedicated facilities

Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Long term, Systemic, Inhalation: 16.67 mg/m ³ . Risk characterisation ratio : 0.064 Long term, Systemic, Combined: Risk characterisation ratio : 0.072 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.008 Short term, Systemic, Inhalation: 33.33 mg/m ³ . Risk characterisation ratio : 0.128 Short term, Systemic, Combined: 0.136

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Not relevant.
Health	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For scaling see http://www.ecetoc.org/tra

Additional good practice advice beyond the REACH CSA

Environment	: Ensure control measures are regularly inspected and maintained.
Health	: Ensure good industrial hygiene. Ensure control measures are regularly inspected and maintained.

Annex to the extended Safety Data Sheet (eSDS)

Identification of the substance or mixture

Product definition : Mono-constituent substance
Product name : METHANOL

Section 1 - Title

Short title of the exposure scenario : Professional use of methanol as a laboratory agent

List of use descriptors : **Identified use name:** Use in laboratories. Professional settings
Process Category: PROC10, PROC15
Substance supplied to that use in form of: As such, In a mixture
Sector of end use: SU22
Subsequent service life relevant for that use: No.
Environmental Release Category: ERC08a
Market sector by type of chemical product: Not applicable.
Article category related to subsequent service life: Not applicable.

Environmental contributing scenarios : **Wide dispersive indoor use of processing aids in open systems - ERC08a**

Health contributing scenarios : **Roller application or brushing of adhesive and other coating - PROC10**
Use a laboratory reagent - PROC15

Number of the ES : 9

Section 2 - Exposure controls

Contributing scenario controlling environmental exposure for 0: Wide dispersive indoor use of processing aids in open systems

As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.

Contributing scenario controlling worker exposure for 0: Roller application or brushing of adhesive and other coating

Concentration of substance in mixture or article : Covers percentage substance in the product up to 5%.

Physical state : Liquid.

Dust : Not applicable.

Amounts used : Not relevant.

Frequency and duration of use : > 4 h (half shift). 5 workdays/week.

Human factors not influenced by risk management : Dermal exposure: Both hands (960 cm²)

Area of use: : Indoor

Conditions and measures related to personal protection and hygiene

Respiratory protection : Not applicable.

Contributing scenario controlling worker exposure for 1: Use a laboratory reagent

Concentration of substance in mixture or article	: Covers percentage substance in the product up to 100%
Physical state	: Liquid.
Dust	: Not applicable.
Amounts used	: Not relevant.
Frequency and duration of use	: > 4 h (half shift). 5 workdays/week.
Human factors not influenced by risk management	: Dermal exposure: Palm of one hand (240cm ²)
Area of use:	: Indoor
Ventilation control measures	: Local exhaust ventilation with an efficacy of 80%.
Conditions and measures related to personal protection and hygiene	
Respiratory protection	: Not applicable.

Section 3 - Exposure estimation and reference to its source

Website:	: Not applicable.
Exposure estimation and reference to its source - Environment: 2: Wide dispersive indoor use of processing aids in open systems	
Exposure assessment (environment):	: As no environmental hazard was identified, no environmental related exposure assessment and risk characterization was performed.
Exposure estimation	: Not relevant.
Exposure estimation and reference to its source - Workers: 0: Roller application or brushing of adhesive and other coating	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034 Long term, Systemic, Inhalation: 33.33 mg/m ³ . Risk characterisation ratio : 0.128 Long term, Systemic, Combined: Risk characterisation ratio : 0.162 Short term, Systemic, Dermal: 1.37 mg/kg bw/day . Risk characterisation ratio : 0.034 Short term, Systemic, Inhalation: 66.67 mg/m ³ . Risk characterisation ratio : 0.256 Short term, Systemic, Combined: 0.290
Exposure estimation and reference to its source - Workers: 1: Use a laboratory reagent	
Exposure assessment (human):	: ECETOC TRA workers (v2.0) modified Reduction factor for local exhaust ventilation (LEV) has not been used for the calculation of dermal exposure. The concentration of the substance has been considered using a linear approach.
Exposure estimation	: Long term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.009 Long term, Systemic, Inhalation: 13.33 mg/m ³ . Risk characterisation ratio : 0.051 Long term, Systemic, Combined: Risk characterisation ratio : 0.060 Short term, Systemic, Dermal: 0.34 mg/kg bw/day . Risk characterisation ratio : 0.009 Short term, Systemic, Inhalation: 26.67 mg/m ³ . Risk characterisation ratio : 0.112 Short term, Systemic, Combined: 0.212

Section 4 - Guidance to DU to evaluate whether he works inside the boundaries set by the ES

Environment	: Not relevant.
Health	: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. For scaling see http://www.ecetoc.org/tra

Additional good practice advice beyond the REACH CSA

Environment	: Ensure control measures are regularly inspected and maintained.
Health	: Ensure good industrial hygiene. Ensure control measures are regularly inspected and maintained.