



Methanol

ACCORDING TO EC-REGULATIONS 1907/2006 (REACH), 1272/2008 (CLP) & 2020/878

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifier

Product Name	Methanol
Chemical Name	Methyl alcohol
Chemical Formula	CH ₃ OH
CAS No.	67-56-1
EC No.	200-659-6
REACH Registration No.	01-2119433307-44-XXXX

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

Identified Use(s)	<ul style="list-style-type: none">• Formulation and (re)packing of substances and mixtures• Use as a fuel in industrial settings• Use as a fuel in professional settings• Industrial use in cleaning agents
-------------------	--

Uses Advised Against	None known.
----------------------	-------------

1.3 Details of the supplier of the safety data sheet

Company Identification	Qatar Fuel Additives Company Ltd.
Address	Mesaieed Industrial City, PO Box 22700, Doha, State of Qatar.
Telephone	(+) 974-4476-1805
E-mail	qafacproducts@qafac.com.qa

Only representative of a non-Community manufacturer

Company Identification	QatarEnergy Marketing B.V.(OR)
Address	23 rd floor, Tower E, WTC, The Hague Prinses Margrietplantsoen 88, 2595BR The Hague, THE NETHERLANDS
Telephone	+31 70 205 5630
E-mail	reach@qatarenergy.qa
Website	www.qatarenergy.qa

1.4 Emergency telephone number

National Poisons Information Service (Birmingham Centre)	+44 111
For Spill, Leak, Fire, Exposure or Accident, Call CHEMTREC Day or Night	Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-741-5970 and +1-703-527-3887 (collect calls accepted)



Methanol

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Regulation (EC) No. 1272/2008 (CLP) Flam. Liq. 2 :Highly flammable liquid and vapour.
Acute Tox. 3 :Toxic if swallowed.
Acute Tox. 3 :Toxic in contact with skin.
Acute Tox. 3 :Toxic if inhaled.
STOT SE 1 :Causes damage to organs.

2.2 Label elements

According to Regulation (EC) No. 1272/2008 (CLP)
Product Name Methanol.

Hazard Pictogram(s)



GHS02



GHS06



GHS08

Signal Word(s)

Danger

Hazard Statement(s)

H225: Highly flammable liquid and vapour.
H301: Toxic if swallowed.
H311: Toxic in contact with skin.
H331: Toxic if inhaled.
H370: Causes damage to organs.

Precautionary Statement(s)

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P260: Do not breathe vapour.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P308+P311: IF exposed or concerned: Call a POISON CENTER/doctor.
P370+P378: In case of fire: Use water spray or fog, alcohol resistant foam, dry chemical or carbon dioxide to extinguish.

2.3 Other hazards

This product contains: 78-93-3 (Endocrine disrupting properties)

2.4 Additional Information

For full text of H/P Statements see section 16.



Methanol

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

HAZARDOUS INGREDIENT(S)	CAS No.	EC No. / REACH Registration No.	%W/W	Hazard Statement(s)	Hazard Pictogram(s)
Methanol	67-56-1	200-659-6 01-2119433307-44-XXXX	≥99	Flam. Liq. 2 H225 Acute Tox. 3 H301 Acute Tox. 3 H311 Acute Tox. 3 H331 STOT SE 1 H370	GHS02 GHS06 GHS08
Methyl acetate	79-20-9	201-185-2 01-2119459211-47-XXXX	<0.015	Flam. Liq. 2 H225 Eye Irrit. 2 H319 STOT SE 3 H336 EUH066	GHS02 GHS07
Acetic acid	64-19-7	200-580-7 01-2119475328-30-XXXX	<0.005	Flam. Liq. 3 H226 Skin Corr. 1A H314	GHS02 GHS05
Acetone	67-64-1	200-662-2 01-2119471330-49-XXXX	<0.003	Flam. Liq. 2 H225 Eye Irrit. 2 H319 STOT SE 3 H336 EUH066	GHS02 GHS07
Ethanol	64-17-5	200-578-6 01-2119457610-43-XXXX	<0.005	Flam. Liq. 2 H225	GHS02
Butanone	78-93-3	201-159-0 01-2119457290-43-XXXX	<0.001	Flam. Liq. 2 H225 Eye Irrit. 2 H319 STOT SE 3 H336 EUH066	GHS02 GHS07

HAZARDOUS INGREDIENT(S)	CAS No.	Specific Concentration Limit		M-factor	ATE
Methanol	67-56-1	STOT SE 1	C>= 10.00 <= 100.00		Acute Tox. 3 (H301) : 100.2
		STOT SE 2	C>= 3.00 < 10.00		Acute Tox. 3 (H311) : 300.6
					Acute Tox. 3 (H331) : 3.010
Ethanol	64-17-5	Eye Irrit. 2	C>= 50.00 <= 100.00		
Acetic acid	64-19-7	Skin Corr. 1A	C>= 90.00 <= 100.00		
		Skin Corr. 1B	C>= 25.00 < 90.00		
		Skin Irrit. 2	C>= 10.00 < 25.00		
		Eye Irrit. 2	C>= 10.00 < 25.00		

Contains no non-classified vPvB substances or substances with a Union workplace exposure limit.

For full text of H/P Statements see section 16.

3.2 Mixtures

Not applicable.



Methanol

SECTION 4: FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation	Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/doctor if you feel unwell.
Skin Contact	Take off immediately all contaminated clothing. Rinse skin with water.
Eye Contact	Flush eyes with water for at least 15 minutes while holding eyelids open. If symptoms persist, obtain medical attention.
Ingestion	Rinse mouth. Immediately call a POISON CENTER/doctor.

4.2 Most important symptoms and effects, both acute and delayed

Toxic by inhalation, in contact with skin and if swallowed. Causes damage to organs.

4.3 Indication of any immediate medical attention and special treatment needed

IF exposed or concerned: Call a POISON CENTER/doctor.

SECTION 5: FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media	Use water spray or fog, alcohol resistant foam, dry chemical or carbon dioxide to extinguish.
Unsuitable extinguishing media	Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Highly flammable liquid and vapour. Vapours are heavier than air and may travel considerable distances to a source of ignition and flashback. Decomposes in a fire giving off toxic fumes: Carbon monoxide, Carbon dioxide.

5.3 Advice for firefighters

Fire fighters should wear complete protective clothing including self-contained breathing apparatus. Evacuate the area and keep personnel upwind. If it is safe to do so, containers should be removed from fire area because they are likely to rupture under fire conditions. Water spray should be used to cool containers.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Remove all ignition sources. Do not breathe vapour. Wear appropriate personal protective equipment, avoid direct contact. Take off immediately all contaminated clothing and wash it before reuse. Wash hands and exposed skin thoroughly after handling.

6.2 Environmental precautions

Do not allow to enter drains, sewers or watercourses.

6.3 Methods and material for containment and cleaning up

Shut off leaks if without risk. Adsorb spillages onto sand, earth or any suitable adsorbent material. Transfer to a lidded container for disposal or recovery.

6.4 Reference to other sections

See Also Section 8, 13.



Methanol

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for safe handling

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical/ventilating/lighting/equipment. Use non-sparking tools. Take action to prevent static discharges. Use only outdoors or in a well-ventilated area. Do not breathe vapour. Wear protective gloves/protective clothing/eye protection/face protection. Wash hands and exposed skin thoroughly after handling. Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed. Store in a well-ventilated place. Keep cool. Store locked up.

Storage temperature

Ambient.

Storage life

Stable under normal conditions.

Incompatible materials

Strong oxidising agents.

7.3 Specific end use(s)

- Formulation and (re)packing of substances and mixtures
- Use as a fuel in industrial settings
- Use as a fuel in professional settings
- Industrial use in cleaning agents

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.1.1 Occupational Exposure Limits

SUBSTANCE	CAS No.	LTEL (8 hr TWA ppm)	LTEL (8 hr TWA mg/m ³)	STEL (ppm)	STEL (mg/m ³)	Note
Methanol	67-56-1	200	266	250	333	Sk
Methyl acetate	79-20-9	200	616	250	770	
Acetone	67-64-1	500	1210	1500	3620	
Ethanol	64-17-5	1000	1920			
Butanone	78-93-3	200	600	300	899	Sk, BMGV
Acetic acid	64-19-7	10	25	20	50	

Region Source

United Kingdom UK Workplace Exposure Limits EH40/2005 (Fourth edition, published 2020)

Remark Notes

Sk Can be absorbed through the skin. The assigned substances are those for which there are concerns that dermal absorption will lead to systemic toxicity.

BMGV Biological monitoring guidance values are listed in Table 2.



Methanol

8.1.2 Biological limit value

Substances	CAS No.	Sampling	Tissues	Control parameters	Biological monitoring guidance value	Comments
Butanone	78-93-3	Post shift	Urine	butan-2-one	70 µmol butan-2-one/L	

8.1.3 PNECs and DNELs

DNEL / DMEL	Oral	Inhalation	Dermal
Industry - Long Term - Local effects		130 mg/m ³	
Industry - Long Term - Systemic effects		130 mg/m ³	20 mg/kg bw/day
Industry - Short term - Local effects		130 mg/m ³	
Industry - Short term - Systemic effects		130 mg/m ³	20 mg/kg bw/day
Consumer - Long Term - Local effects		26 mg/m ³	
Consumer - Long Term - Systemic effects	4 mg/kg bw/day	26 mg/m ³	4 mg/kg bw/day
Consumer - Short term - Local effects		26 mg/m ³	
Consumer - Short term - Systemic effects	4 mg/kg bw/day	26 mg/m ³	4 mg/kg bw/day

Environment	PNEC
Aquatic Compartment (including sediment)	Fresh water: 20.8 mg/l Fresh water (Intermittent release): 1540 mg/l Sea water: 2.08 mg/l Fresh water (Sediment): 77 mg/kg dw Sea water (Sediment): 7.7 mg/kg dw
Terrestrial Compartment	Sewage Treatment Plant: 100 mg/l
Atmospheric Compartment	Soil: 100 mg/kg dw

8.2 Exposure controls

8.2.1. Appropriate engineering controls Use non-sparking ventilation systems, approved explosion-proof equipment, and intrinsically safe electrical systems. Use with ventilation, local exhaust ventilation or breathing protection.

8.2.2. Personal protection equipment



Eye Protection

Wear protective eye glasses for protection against liquid splashes.



Skin protection

Wear suitable protective clothing and gloves.

Breakthrough time of the glove material: refer to the information provided by the gloves' producer.



Respiratory protection

Wear suitable respiratory protection.



Methanol



Thermal hazards

Not applicable.

8.2.3. Environmental Exposure Controls Do not allow to enter drains, sewers or watercourses.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Liquid.
Colour	Clear, Colourless.
Odour	Mild, Characteristic.
Melting point/freezing point	-97.8°C
Boiling point or initial boiling point and boiling range	64.6°C
Flammability	Highly flammable liquid and vapour.
Lower and upper explosion limit	6.7-36 Vol-%
Flash Point	15.6°C [Open cup]
Auto-ignition temperature	464°C
Decomposition Temperature	Not available.
pH	5.9-6.0
Kinematic Viscosity	0.00737 cm ² /s @ 20°C
Solubility	Solubility (Water) : Miscible. Solubility (Other): Miscible with: Ethanol, Ether, Ketones, Benzene, Most organic solvents. Soluble in: Acetone, Chloroform.
Partition coefficient n-octanol/water (log value)	Log Pow: -0.77
Vapour pressure	12.8 kPa @ room temperature
Density and/or relative density	0.7928 @ 20°C
Relative vapour density	1.1 (Air = 1)
Particle characteristics	Not applicable.

9.2 Other information

None.

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity

Stable under normal conditions.

10.2 Chemical Stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions known if used for its intended purpose.

10.4 Conditions to avoid

Keep away from heat, sources of ignition and direct sunlight.

10.5 Incompatible materials

Strong oxidising agents.

10.6 Hazardous decomposition products

No hazardous decomposition products known.



Methanol

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity - Ingestion	Toxic if swallowed. LD50 (rat): 1187 mg/kg
Acute toxicity - Skin Contact	Toxic in contact with skin. LD50 (rabbit): 17100 mg/kg bw
Acute toxicity - Inhalation	Toxic if inhaled. LC50 (rat) (6 hour(s)): 43700 mg/m ³

The available experimental test data are reliable and suitable for classification purposes under Regulation (EC) No 1272/2008. Although the lethal dose of methanol is high for most experimental animals, these data are not employed for classification. The classification is only based upon the experiences in humans and classifies methanol as acutely toxic by oral, dermal and inhalative exposure and, furthermore, as capable of inducing serious irreversible effects upon single exposure by all of these routes. As a result, the substance is considered to be classified for acute toxicity category 3.

Skin corrosion/irritation	Not classified.
Serious eye damage/irritation	Not classified.
Skin sensitization data	It is not a skin sensitizer.
Respiratory sensitization data	Not classified.
Germ cell mutagenicity	There is no evidence of mutagenic potential.
Carcinogenicity	No evidence of carcinogenicity.
Reproductive toxicity	No evidence of reproductive effects.
Lactation	Not classified.
STOT - single exposure	Causes damage to organs. No data.
STOT - repeated exposure	None anticipated.
Aspiration hazard	Not classified.

11.2 Information on other hazards

Endocrine disrupting properties: List II: Substances under evaluation for endocrine disruption under an EU legislation 78-93-3 (Human health)

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity - Aquatic invertebrates	Low toxicity to invertebrates. Acute: EC50 (Daphnia magna)(96 hour): 18260 mg/l Chronic: NOEC (Daphnia magna): 208 mg/l
Toxicity - Fish	Low toxicity to fish. Acute: LC50 (Lepomis macrochirus)(96 hour): 15400 mg/l Chronic: NOEC (Pimephales promelas): 450 mg/l
Toxicity - Algae	Low toxicity to algae. EC50 (Pseudokirchneriella subcapitata) (96 hour): 22000 mg/l
Toxicity - Sediment Compartment	Not classified.
Toxicity - Terrestrial Compartment	Not classified.

12.2 Persistence and degradability

Readily biodegradable. Unlikely to persist.

12.3 Bioaccumulative potential

The substance has low potential for bioaccumulation.
Bioconcentration factor (BCF): <10



Methanol

12.4 Mobility in soil

Miscible with water. The substance is predicted to have high mobility in soil.

12.5 Results of PBT and vPvB assessment

Not classified as PBT or vPvB.

12.6 Endocrine disrupting properties

None known.

12.7 Other adverse effects

Not known.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of this material and its container as hazardous waste. Dispose of empty containers and wastes safely. Decontaminate empty containers before recycling. Send to a licensed recycler, reclaimer or incinerator.

13.2 Additional Information

Disposal should be in accordance with local, state or national legislation.

SECTION 14: TRANSPORT INFORMATION

14.1 UN number or ID number

UN No. 1230

14.2 UN proper shipping name

UN proper shipping name METHANOL

14.3 Transport hazard class(es)

ADR/RID

ADR/RID Class 3

ADR Classification Code FT1

Special Provisions 279

Limited Quantities 1 L

Excepted Quantities E2

Emergency Action Code •2WE

Mixed Packing Instructions for Packages P001 IBC02

Mixed Packing Instructions for Packages MP19

Packing Instructions for Portable Tanks T7

Special Provisions for Portable Tanks TP2

Tank Code for Tanks L4BH

Special Provisions for Tanks TU15

Vehicle for Tank Carriage FL

ADR Transport Category 2

Tunnel Restriction Code D/E

Special Provisions for Carriage - Loading, CV13 CV28

Unloading and Handling

Special Provisions for Carriage - S2 S19

Operation

ADR HIN 336



Methanol

IMDG	
IMDG Class	3
Special Provisions	279
Limited Quantities	1 L
Excepted Quantities	E2
Mixed Packing Instructions for Packages	P001 IBC02
Packing Instructions for Portable Tanks	T7
Special Provisions for Portable Tanks	TP2
IMDG EMS	F-E, S-D
Stowage and Handling	Category B SW2

ICAO/IATA

IATA Proper Shipping Name	METHANOL
Excepted Quantities	E2
Passenger and Cargo Aircraft Limited	Y341
Quantities Packing Instructions	
Passenger and Cargo Aircraft Limited	1L
Quantities Max net Qty	
Passenger and Cargo Aircraft Packing	352
Instructions	
Passenger and Cargo Aircraft Max net	1L
Qty	
Cargo Aircraft Packing Instructions	364
Cargo Aircraft Max net Qty	60L
Special Provisions	A113
Emergency Response Guidebook (ERG)	3L

Code

Labels

Labels 3 +6.1



14.4 Packing group

Packing group II

14.5 Environmental hazards

Environmental hazards Not classified as a Marine Pollutant.

14.6 Special precautions for user

Special precautions for user Not known.

14.7 Maritime transport in bulk according to IMO instruments

No information available



Methanol

SECTION 15: REGULATORY INFORMATION

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

European Regulations - Authorisations and/or Restrictions On Use

Candidate List of Substances of Very High Concern for Authorisation Not listed

REACH: ANNEX XIV list of substances subject to authorisation Not listed

REACH: Annex XVII Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles Methanol (67-56-1), Methyl acetate (79-20-9), Acetone (67-64-1), Ethanol (64-17-5), Butanone (78-93-3), Acetic acid (64-19-7)

Community Rolling Action Plan (CoRAP) Methanol (67-56-1), Butanone (78-93-3)

Regulation (EU) N° 2019/1021 of the European Parliament and of the Council on persistent organic pollutants Not listed

Regulation (EC) N° 1005/2009 on substances that deplete the ozone layer Not listed

Regulation (EU) N° 649/2012 of the European Parliament and of the Council concerning the export and import of hazardous chemicals Not listed

National regulations Not known.

Other Not known.




15.2 Chemical Safety Assessment

A REACH chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

The following sections contain revisions or new statements: 1-16

LEGEND

Hazard Pictogram(s)			
	GHS02	GHS06	GHS08
Hazard classification	GHS05: GHS: Corrosion		
	GHS07: GHS: Exclamation mark		
Hazard classification	Flam. Liq. 2 : Flammable liquid, Category 2		
	Flam. Liq. 3 : Flammable liquid, Category 3		
	Acute Tox. 3 : Acute toxicity, Category 3		
	Skin Corr. 1A : Skin corrosion/irritation, Category 1A		
	Eye Irrit. 2 : Serious eye damage/irritation, Category 2		
Hazard classification	STOT SE 3 : Specific target organ toxicity — single exposure, Category 3		



Methanol

STOT SE 1 : Specific target organ toxicity — single exposure, Category 1

Hazard Statement(s)

H225: Highly flammable liquid and vapour.
H226: Flammable liquid and vapour.
H301: Toxic if swallowed.
H311: Toxic in contact with skin.
H314: Causes severe skin burns and eye damage.
H319: Causes serious eye irritation.
H331: Toxic if inhaled.
H336: May cause drowsiness or dizziness.
H370: Causes damage to organs.
EUH066: Repeated exposure may cause skin dryness or cracking.

Precautionary Statement(s)

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233: Keep container tightly closed.
P240: Ground and bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting/equipment.
P242: Use non-sparking tools.
P243: Take action to prevent static discharges.
P260: Do not breathe vapour.
P264: Wash hands and exposed skin thoroughly after handling.
P270: Do not eat, drink or smoke when using this product.
P271: Use only outdoors or in a well-ventilated area.
P280: Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310: IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P302+P352: IF ON SKIN: Wash with plenty of water.
P303+P361+P353: IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P308+P311: IF exposed or concerned: Call a POISON CENTER/doctor.
P311: Call a POISON CENTRE/doctor.
P312: Call a POISON CENTER/doctor if you feel unwell.
P321: Specific treatment (see Medical Advice on this label).
P330: Rinse mouth.
P361+P364: Take off immediately all contaminated clothing and wash it before reuse.
P370+P378: In case of fire: Use water spray or fog, alcohol resistant foam, dry chemical or carbon dioxide to extinguish.
P403+P233: Store in a well-ventilated place. Keep container tightly closed.
P403+P235: Store in a well-ventilated place. Keep cool.
P405: Store locked up.
P501: Dispose of contents in accordance with local, state or national legislation.



Methanol

Acronyms

ADR : European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE : Acute Toxicity Estimate
CAS : Chemical Abstracts Service
CLP : Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DNEL : Derived No Effect Level
EC : European Community
IATA : International Air Transport Association
IBC : Intermediate Bulk Container
ICAO : International Civil Aviation Organization
IMDG : International Maritime Dangerous Goods
LTEL : Long term exposure limit
PBT : Persistent, Bioaccumulative and Toxic
PNEC : Predicted No Effect Concentration
REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals
RID : Regulations concerning the International Carriage of Dangerous Goods by Rail
STEL : Short term exposure limit
STOT : Specific Target Organ Toxicity
UN : United Nations
vPvB : very Persistent and very Bioaccumulative

Key literature references and sources for Regulation (EC) No. 1272/2008 (CLP)
data used to compile the SDS

Disclaimers

Information contained in this publication or as otherwise supplied to Users is believed to be accurate and is given in good faith, but it is for the Users to satisfy themselves of the suitability of the product for their own particular purpose.

Qatar Fuel Additives Company Ltd. gives no warranty as to the fitness of the product for any particular purpose and any implied warranty or condition (statutory or otherwise) is excluded except to the extent that exclusion is prevented by law.

Qatar Fuel Additives Company Ltd. accepts no liability for loss or damage (other than that arising from death or personal injury caused by defective product, if proved), resulting from reliance on this information. Freedom under Patents, Copyright and Designs cannot be assumed.



Methanol

Table of Contents

1.	Exposure Scenario 1: Formulation and (re)packing of substance and mixtures	16
1.1	Formulation of preparations (ERC 2).....	16
1.2	Use in closed process, no likelihood of exposure (PROC 1).....	16
1.3	Use in closed, continuous process with occasional controlled exposure (PROC 2)	17
1.4	Use in closed batch process (synthesis or formulation) (PROC 3).....	17
1.5	Use in batch and other process (synthesis) where opportunity for exposure arises (PROC 4).....	18
1.6	Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (PROC5).....	18
1.7	Transfer of chemicals from / to vessel / large containers at non-dedicated facilities (PROC8a)	19
1.8	Transfer of chemicals from / to vessel / large containers at dedicated facilities (PROC 8b)	19
1.9	Transfer of chemicals into small containers (dedicated filling line) (PROC 9)	20
1.10	Use of laboratory reagents in small scale laboratories (PROC 15)	21
1.11	Exposure estimation.....	21
1.12	Guidance to DU to evaluate whether he works inside the boundaries set by the ES.....	25
2.	Exposure Scenario 2: Use as a fuel in industrial settings.....	26
1.1	Industrial use of substances in closed systems (ERC 7)	26
1.2	Use in closed process, no likelihood of exposure (PROC 1).....	26
1.3	Use in closed, continuous process with occasional controlled exposure (PROC 2)	27
1.4	Use in closed batch process (synthesis or formulation) (PROC 3).....	27
1.5	Transfer of chemicals from / to vessel / large containers at non-dedicated facilities (PROC8a)	28
1.6	Transfer of chemicals from / to vessel / large containers at dedicated facilities (PROC 8b)	28
1.7	Using material as fuel sources, limited exposure to unburned product to be expected (PROC 16)	29
1.8	Hand-mixing with intimate contact and only PPE available (PROC 19)	29
1.9	Exposure estimation	30
1.10	Guidance to DU to evaluate whether he works inside the boundaries set by the ES.....	33
3.	Exposure Scenario 3: Use as a fuel in professional setting	34
1.1	Industrial use of substances in closed systems (ERC 8b).....	34
1.2	Use in closed process, no likelihood of exposure (PROC 1).....	34
1.3	Use in closed, continuous process with occasional controlled exposure (PROC 2)	35
1.4	Use in closed batch process (synthesis or formulation) (PROC 3).....	35
1.5	Transfer of chemicals from / to vessel / large containers at non-dedicated facilities (PROC8a)	36
1.6	Transfer of chemicals from / to vessel / large containers at dedicated facilities (PROC 8b)	36



Methanol

1.7 Using material as fuel sources, limited exposure to unburned product to be expected (PROC 16)	37
1.8 Hand-mixing with intimate contact and only PPE available (PROC 19)	37
1.9 Exposure estimation	38
1.10 Guidance to DU to evaluate whether he works inside the boundaries set by the ES.....	41
4. Exposure Scenario 4: Industrial use in cleaning agent	42
1.1 Industrial use of processing aids (ERC 8b).....	42
1.2 Use in closed process, no likelihood of exposure (PROC 1).....	42
1.3 Use in closed, continuous process with occasional controlled exposure (PROC 2)	43
1.4 Use in closed batch process (synthesis or formulation) (PROC 3).....	43
1.5 Use in batch and other process (synthesis) where opportunity for exposure arises (PROC4).....	44
1.6 Industrial spraying (PROC 7)	44
1.7 Transfer of chemicals from / to vessel / large containers at non-dedicated facilities (PROC 8a)	45
1.8 Transfer of chemicals from / to vessel / large containers at dedicated facilities (PROC 8b)	45
1.9 Roller application or brushing (PROC 10)	46
1.10 Treatment of articles by dipping and pouring (PROC 13).....	47
1.11 Exposure estimation.....	47
1.12 Guidance to DU to evaluate whether he works inside the boundaries set by the ES.....	51



Methanol

1. Exposure Scenario 1: Formulation and (re)packing of substance and mixtures

SECTION 1:	Title of exposure scenario
	Formulation and (re)packing of substance and mixtures
Contributing scenario controlling environmental exposure	
Formulation of preparations	ERC2
Contributing scenario controlling worker exposure	
Use in closed process, no likelihood of exposure	PROC1
Use in closed, continuous process with occasional controlled exposure	PROC2
Use in closed batch process (synthesis or formulation)	PROC3
Use in batch and other process (synthesis) where opportunity for exposure arises	PROC4
Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)	PROC5
Transfer of chemicals from / to vessel / large containers at non-dedicated facilities	PROC8a
Transfer of chemicals from / to vessel / large containers at dedicated facilities	PROC8b
Transfer of chemicals into small containers (dedicated filling line)	PROC9
Use of laboratory reagents in small scale laboratories	PROC15
SECTION 2:	Conditions of use
2.1	Contributing scenario controlling environmental exposure: 1.1 Formulation of preparations (ERC 2)
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed	
2.2	Contributing scenario controlling worker exposure: 1.2 Use in closed process, no likelihood of exposure (PROC 1)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 % Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 240 cm ² Exposed skin surface, Short term, Systemic effects: 240 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: No	
Conditions and measures related to personal protection, hygiene and health evaluation	



Methanol

Respiratory protection: No	
Dermal protection: No	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Industrial	
2.3	Contributing scenario controlling worker exposure: 1.3 Use in closed, continuous process with occasional controlled exposure (PROC 2)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 %	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 480 cm ²	
Exposed skin surface, Short term, Systemic effects: 480 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Industrial	
2.4	Contributing scenario controlling worker exposure: 1.4 Use in closed batch process (synthesis or formulation) (PROC 3)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 %	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 240 cm ²	
Exposed skin surface, Short term, Systemic effects: 240 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	



Methanol

Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor Domain: Industrial	
2.5	Contributing scenario controlling worker exposure: 1.5 Use in batch and other process (synthesis) where opportunity for exposure arises (PROC 4)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 %	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 480 cm ²	
Exposed skin surface, Short term, Systemic effects: 480 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor Domain: Industrial	
2.6	Contributing scenario controlling worker exposure: 1.6 Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (PROC5)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 %	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	



Methanol

Exposed skin surface, Long Term, Systemic effects: 480 cm ²	
Exposed skin surface, Short term, Systemic effects: 480 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Industrial	
2.7	Contributing scenario controlling worker exposure: 1.7 Transfer of chemicals from / to vessel / large containers at non-dedicated facilities (PROC8a)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 %	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 960 cm ²	
Exposed skin surface, Short term, Systemic effects: 960 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Industrial	
2.8	Contributing scenario controlling worker exposure: 1.8 Transfer of chemicals from / to vessel / large containers at dedicated facilities (PROC 8b)



Methanol

Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 % Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 960 cm ² Exposed skin surface, Short term, Systemic effects: 960 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 95%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor Domain: Industrial	
2.9	Contributing scenario controlling worker exposure: 1.9 Transfer of chemicals into small containers (dedicated filling line) (PROC 9)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 % Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 480 cm ² Exposed skin surface, Short term, Systemic effects: 480 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Place of use: Indoor Domain: Industrial	



Methanol

2.9	Contributing scenario controlling worker exposure: 1.10 Use of laboratory reagents in small scale laboratories (PROC 15)		
Product characteristics			
Percentage (w/w) of substance in mixture/article: 100 % Physical form of the used product: Liquid Dustiness: High			
Human factors not influenced by risk management			
Exposed skin surface, Long Term, Systemic effects: 240 cm² Exposed skin surface, Short term, Systemic effects: 240 cm²			
Frequency and duration of use			
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)			
Technical conditions and measures to control dispersion from source towards the worker			
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]			
Conditions and measures related to personal protection, hygiene and health evaluation			
Respiratory protection: No Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]			
Conditions and measures related to personal protection, hygiene and health evaluation			
Respiratory protection: No Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]			
SECTION 3:		1.11 Exposure estimation	
3.1. Environment			
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed			
3.2. Worker			
Contributing scenario controlling worker exposure: Use in closed process, no likelihood of exposure (PROC 1)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	0.013351 mg/m³	130 mg/m³	0.000103
Inhalation, Systemic effects, Short term	0.053403 mg/m³	130 mg/m³	0.000411
Dermal, Systemic effects, Long Term	0.034286 mg/kg bw/day	20 mg/kg bw/day	0.001714
Dermal, Systemic effects, Short term	0.034286 mg/kg bw/day	20 mg/kg bw/day	0.001714
Combined routes, Systemic effects, Long Term	0.036193 mg/kg bw/day	-	0.001817



Methanol

Combined routes, Systemic effects, Short term	0.041915 mg/kg bw/day	-	0.002125
Contributing scenario controlling worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC 2)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	0.274286 mg/kg bw/day	20 mg/kg bw/day	0.013174
Dermal, Systemic effects, Short term	0.274286 mg/kg bw/day	20 mg/kg bw/day	0.013174
Inhalation, Systemic effects, Long Term	3.338 mg/m ³	130 mg/m ³	0.025675
Inhalation, Systemic effects, Short term	13.351 mg/m ³	130 mg/m ³	0.102698
Combined routes, Systemic effects, Long Term	0.7511mg/kg bw/day	-	0.039389
Combined routes, Systemic effects, Short term	2.182 mg/kg bw/day	-	0.116413
Contributing scenario controlling worker exposure: Use in closed batch process (synthesis or formulation) (PROC 3)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	0.137143 mg/kg bw/day	20 mg/kg bw/day	0.006857
Dermal, Systemic effects, Short term	0.137143 mg/kg bw/day	20 mg/kg bw/day	0.006857
Inhalation, Systemic effects, Long Term	6.675 mg/m ³	130 mg/m ³	0.051349
Inhalation, Systemic effects, Short term	26.702 mg/m ³	130 mg/m ³	0.205397
Combined routes, Systemic effects, Long Term	1.091 mg/kg bw/day	-	0.058206
Combined routes, Systemic effects, Short term	3.952 mg/kg bw/day	-	0.212254
Contributing scenario controlling worker exposure: Use in batch and other process (synthesis) where opportunity for exposure arises (PROC 4)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	1.371 mg/kg bw/day	20 mg/kg bw/day	0.068571
Dermal, Systemic effects, Short term	1.371 mg/kg bw/day	20 mg/kg bw/day	0.068571



Methanol

Short term			
Inhalation, Systemic effects, Long Term	13.351 mg/m ³	130 mg/m ³	0.102698
Inhalation, Systemic effects, Short term	53.403 mg/m ³	130 mg/m ³	0.410794
Combined routes, Systemic effects, Long Term	3.279 mg/kg bw/day	-	0.17127
Combined routes, Systemic effects, Short term	9 mg/kg bw/day	-	0.479365
Contributing scenario controlling worker exposure: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact) (PROC 5)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Dermal, Systemic effects, Short term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Inhalation, Systemic effects, Long Term	33.377 mg/m ³	130 mg/m ³	0.256746
Inhalation, Systemic effects, Short term	13.351 mg/m ³	130 mg/m ³	0.102698
Combined routes, Systemic effects, Long Term	7.511 mg/kg bw/day	-	0.393889
Combined routes, Systemic effects, Short term	4.65 mg/kg bw/day	-	0.239841
Contributing scenario controlling worker exposure: Transfer of chemicals from / to vessel / large containers at non-dedicated facilities (PROC 8a)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Dermal, Systemic effects, Short term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Inhalation, Systemic effects, Long Term	33.377 mg/m ³	130 mg/m ³	0.256746
Inhalation, Systemic effects, Short term	66.754 mg/m ³	130 mg/m ³	0.513492
Combined routes, Systemic effects, Long Term	7.511 mg/kg bw/day	-	0.393889



Methanol

Combined routes, Systemic effects, Short term	12.279 mg/kg bw/day	-	0.650635
Contributing scenario controlling worker exposure: Transfer of chemicals from / to vessel / large containers at dedicated facilities (PROC 8b)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Dermal, Systemic effects, Short term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Inhalation, Systemic effects, Long Term	10.013 mg/m ³	130 mg/m ³	0.077024
Inhalation, Systemic effects, Short term	20.026 mg/m ³	130 mg/m ³	0.154048
Combined routes, Systemic effects, Long Term	4.173 mg/kg bw/day	-	0.214167
Combined routes, Systemic effects, Short term	5.604 mg/kg bw/day	-	0.29119
Contributing scenario controlling worker exposure: Transfer of chemicals into small containers (dedicated filling line) (PROC 9)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	1.371 mg/kg bw/day	20 mg/kg bw/day	0.068571
Dermal, Systemic effects, Short term	1.371 mg/kg bw/day	20 mg/kg bw/day	0.068571
Inhalation, Systemic effects, Long Term	26.702 mg/m ³	130 mg/m ³	0.205397
Inhalation, Systemic effects, Short term	53.403 mg/m ³	130 mg/m ³	0.410794
Combined routes, Systemic effects, Long Term	5.186 mg/kg bw/day	-	0.273968
Combined routes, Systemic effects, Short term	9 mg/kg bw/day	-	0.479365
Contributing scenario controlling worker exposure: Use of laboratory reagents in small scale laboratories (PROC 15)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	0.068571 mg/kg bw/day	20 mg/kg bw/day	0.003429
Dermal, Systemic effects, Short term	0.068571 mg/kg bw/day	20 mg/kg bw/day	0.003429



Methanol

Inhalation, Systemic effects, Long Term	6.675 mg/m ³	130 mg/m ³	0.051349
Inhalation, Systemic effects, Short term	13.351 mg/m ³	130 mg/m ³	0.102698
Combined routes, Systemic effects, Long Term	1.022 mg/kg bw/day	-	0.054778
Combined routes, Systemic effects, Short term	1.976 mg/kg bw/day	-	0.106127
SECTION 4:	1.12 Guidance to DU to evaluate whether he works inside the boundaries set by the ES		
4.1 Health			
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.			
4.2 Environment			
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling could be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use, additional RMMs or a site-specific chemical safety assessment is required.			



Methanol

2. Exposure Scenario 2: Use as a fuel in industrial settings

SECTION 1:	Title of exposure scenario
	Use as a fuel in industrial settings
Contributing scenario controlling environmental exposure	
Industrial use of substances in closed systems	ERC7
Contributing scenario controlling worker exposure	
Use in closed process, no likelihood of exposure	PROC1
Use in closed, continuous process with occasional controlled exposure	PROC2
Use in closed batch process (synthesis or formulation)	PROC3
Transfer of chemicals from / to vessel / large containers at non-dedicated facilities	PROC8a
Transfer of chemicals from / to vessel / large containers at dedicated facilities	PROC8b
Using material as fuel sources, limited exposure to unburned product to be expected	PROC16
Hand-mixing with intimate contact and only PPE available	PROC19
SECTION 2:	Conditions of use
2.1	Contributing scenario controlling environmental exposure: 1.1 Industrial use of substances in closed systems (ERC 7)
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed	
2.2	Contributing scenario controlling worker exposure: 1.2 Use in closed process, no likelihood of exposure (PROC 1)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 % Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 240 cm ² Exposed skin surface, Short term, Systemic effects: 240 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: No	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No Dermal protection: No	
Other given operational conditions affecting workers exposure	



Methanol

Place of use: Indoor Domain: Industrial	
2.3	Contributing scenario controlling worker exposure: 1.3 Use in closed, continuous process with occasional controlled exposure (PROC 2)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 % Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 480 cm ² Exposed skin surface, Short term, Systemic effects: 480 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor Domain: Industrial	
2.4	Contributing scenario controlling worker exposure: 1.4 Use in closed batch process (synthesis or formulation) (PROC 3)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 % Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 240 cm ² Exposed skin surface, Short term, Systemic effects: 240 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	



Methanol

Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Industrial	
2.5	Contributing scenario controlling worker exposure: 1.5 Transfer of chemicals from / to vessel / large containers at non-dedicated facilities (PROC8a)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 %	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 960 cm ²	
Exposed skin surface, Short term, Systemic effects: 960 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Industrial	
2.6	Contributing scenario controlling worker exposure: 1.6 Transfer of chemicals from / to vessel / large containers at dedicated facilities (PROC 8b)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 %	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 960 cm ²	
Exposed skin surface, Short term, Systemic effects: 960 cm ²	
Frequency and duration of use	



Methanol

Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 95%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor Domain: Industrial	
2.7	Contributing scenario controlling worker exposure: 1.7 Using material as fuel sources, limited exposure to unburned product to be expected (PROC 16)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 % Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 240 cm ² Exposed skin surface, Short term, Systemic effects: 240 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: No	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Place of use: Indoor Domain: Industrial	
2.8	Contributing scenario controlling worker exposure: 1.8 Hand-mixing with intimate contact and only PPE available (PROC 19)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 10% Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	



Methanol

Exposed skin surface, Long Term, Systemic effects: 1980 cm ²			
Exposed skin surface, Short term, Systemic effects: 1980 cm ²			
Frequency and duration of use			
Duration of activity: 1 - 4 hour(s)			
Frequency of use: 5 days / week(s)			
Technical conditions and measures to control dispersion from source towards the worker			
Local exhaust ventilation: No			
Conditions and measures related to personal protection, hygiene and health evaluation			
Respiratory protection: No			
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]			
SECTION 3: 1.9 Exposure estimation			
3.1. Environment			
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed			
3.2. Worker			
Contributing scenario controlling worker exposure: Use in closed process, no likelihood of exposure (PROC 1)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	0.013351 mg/m ³	130 mg/m ³	0.000103
Inhalation, Systemic effects, Short term	0.053403 mg/m ³	130 mg/m ³	0.000411
Dermal, Systemic effects, Long Term	0.034286 mg/kg bw/day	20 mg/kg bw/day	0.001714
Dermal, Systemic effects, Short term	0.034286 mg/kg bw/day	20 mg/kg bw/day	0.001714
Combined routes, Systemic effects, Long Term	0.036193 mg/kg bw/day	-	0.001817
Combined routes, Systemic effects, Short term	0.041915 mg/kg bw/day	-	0.002125
Contributing scenario controlling worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC 2)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	0.274286 mg/kg bw/day	20 mg/kg bw/day	0.013714
Dermal, Systemic effects, Short term	0.274286 mg/kg bw/day	20 mg/kg bw/day	0.013714
Inhalation, Systemic effects,	3.338 mg/m ³	130 mg/m ³	0.025675



Methanol

Long Term			
Inhalation, Systemic effects, Short term	13.351 mg/m ³	130 mg/m ³	0.102698
Combined routes, Systemic effects, Long Term	0.7511mg/kg bw/day	-	0.039389
Combined routes, Systemic effects, Short term	2.182 mg/kg bw/day	-	0.116413
Contributing scenario controlling worker exposure: Use in closed batch process (synthesis or formulation) (PROC 3)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	0.137143 mg/kg bw/day	20 mg/kg bw/day	0.006857
Dermal, Systemic effects, Short term	0.137143 mg/kg bw/day	20 mg/kg bw/day	0.006857
Inhalation, Systemic effects, Long Term	6.675 mg/m ³	130 mg/m ³	0.051349
Inhalation, Systemic effects, Short term	26.702 mg/m ³	130 mg/m ³	0.205397
Combined routes, Systemic effects, Long Term	1.091 mg/kg bw/day	-	0.058206
Combined routes, Systemic effects, Short term	3.952 mg/kg bw/day	-	0.212254
Contributing scenario controlling worker exposure: Transfer of chemicals from / to vessel / large containers at non-dedicated facilities (PROC 8a)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Dermal, Systemic effects, Short term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Inhalation, Systemic effects, Long Term	33.377 mg/m ³	130 mg/m ³	0.256746
Inhalation, Systemic effects, Short term	66.754 mg/m ³	130 mg/m ³	0.513492
Combined routes, Systemic effects, Long Term	7.511 mg/kg bw/day	-	0.393889
Combined routes, Systemic effects, Short term	12.279 mg/kg bw/day	-	0.650635
Contributing scenario controlling worker exposure: Transfer of chemicals from / to vessel / large containers at dedicated			



Methanol

facilities (PROC 8b)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Dermal, Systemic effects, Short term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Inhalation, Systemic effects, Long Term	10.013 mg/m ³	130 mg/m ³	0.077024
Inhalation, Systemic effects, Short term	20.026 mg/m ³	130 mg/m ³	0.154048
Combined routes, Systemic effects, Long Term	4.173 mg/kg bw/day	-	0.214167
Combined routes, Systemic effects, Short term	5.604 mg/kg bw/day	-	0.29119
Contributing scenario controlling worker exposure: Using material as fuel sources, limited exposure to unburned product to be expected (PROC 16)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	0.068571 mg/kg bw/day	20 mg/kg bw/day	0.003429
Dermal, Systemic effects, Short term	0.041143 mg/kg bw/day	20 mg/kg bw/day	0.002057
Inhalation, Systemic effects, Long Term	33.377 mg/m ³	130 mg/m ³	0.256746
Inhalation, Systemic effects, Short term	80.105 mg/m ³	130 mg/m ³	0.61619
Combined routes, Systemic effects, Long Term	4.837 mg/kg bw/day	-	0.260175
Combined routes, Systemic effects, Short term	11.485 mg/kg bw/day	-	0.618248
Contributing scenario controlling worker exposure: Hand-mixing with intimate contact and only PPE available (PROC 19)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	1.697 mg/kg bw/day	20 mg/kg bw/day	0.084857
Dermal, Systemic effects, Short term	1.697 mg/kg bw/day	20 mg/kg bw/day	0.084857
Inhalation, Systemic effects, Long Term	20.062 mg/m ³	130 mg/m ³	0.154048



Methanol

Inhalation, Systemic effects, Short term	66.754 mg/m³	130 mg/m³	0.513492
Combined routes, Systemic effects, Long Term	4.588 mg/kg bw/day	-	0.238905
Combined routes, Systemic effects, Short term	11.233 mg/kg bw/day	-	0.598349
SECTION 4:	1.10 Guidance to DU to evaluate whether he works inside the boundaries set by the ES		
4.1 Health			
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.			
4.2 Environment			
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling could be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use, additional RMMs or a site-specific chemical safety assessment is required.			



Methanol

3. Exposure Scenario 3: Use as a fuel in professional setting

SECTION 1:	Title of exposure scenario
	Use as a fuel in professional setting
Contributing scenario controlling environmental exposure	
Wide dispersive indoor use of reactive substances in open systems	ERC8b
Wide dispersive outdoor use of reactive substances in open systems	ERC8e
Contributing scenario controlling worker exposure	
Use in closed process, no likelihood of exposure	PROC1
Use in closed, continuous process with occasional controlled exposure	PROC2
Use in closed batch process (synthesis or formulation)	PROC3
Transfer of chemicals from / to vessel / large containers at non-dedicated facilities	PROC8a
Transfer of chemicals from / to vessel / large containers at dedicated facilities	PROC8b
Using material as fuel sources, limited exposure to unburned product to be expected	PROC16
Hand-mixing with intimate contact and only PPE available	PROC19
SECTION 2:	Conditions of use
2.1	Contributing scenario controlling environmental exposure: Industrial use of substances in closed systems (ERC 8b) Wide dispersive outdoor use of reactive substances in open systems (ERC 8e)
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed	
2.2	Contributing scenario controlling worker exposure: 1.2 Use in closed process, no likelihood of exposure (PROC 1)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 % Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 240 cm ² Exposed skin surface, Short term, Systemic effects: 240 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: No	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	



Methanol

Dermal protection: No	
Other given operational conditions affecting workers exposure	
Place of use: Indoor Domain: Professional	
2.3	Contributing scenario controlling worker exposure: 1.3 Use in closed, continuous process with occasional controlled exposure (PROC 2)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 % Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 480 cm ² Exposed skin surface, Short term, Systemic effects: 480 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 80%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor Domain: Professional	
2.4	Contributing scenario controlling worker exposure: 1.4 Use in closed batch process (synthesis or formulation) (PROC 3)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 % Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 960 cm ² Exposed skin surface, Short term, Systemic effects: 960 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	



Methanol

Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor Domain: Professional	
2.5	Contributing scenario controlling worker exposure: 1.5 Transfer of chemicals from / to vessel / large containers at non-dedicated facilities (PROC8a)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 5 % Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 480 cm ² Exposed skin surface, Short term, Systemic effects: 480 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: No	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor Domain: Professional	
2.6	Contributing scenario controlling worker exposure: 1.6 Transfer of chemicals from / to vessel / large containers at dedicated facilities (PROC 8b)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 5 % Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 960 cm ²	



Methanol

Exposed skin surface, Short term, Systemic effects: 960 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: No	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Professional	
2.7	Contributing scenario controlling worker exposure: 1.7 Using material as fuel sources, limited exposure to unburned product to be expected (PROC 16)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 %	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 240 cm ²	
Exposed skin surface, Short term, Systemic effects: 240 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: No	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Professional	
2.8	Contributing scenario controlling worker exposure: 1.8 Hand-mixing with intimate contact and only PPE available (PROC 19)
Product characteristics	



Methanol

Percentage (w/w) of substance in mixture/article: 10%			
Physical form of the used product: Liquid			
Dustiness: High			
Human factors not influenced by risk management			
Exposed skin surface, Long Term, Systemic effects: 1980 cm ²			
Exposed skin surface, Short term, Systemic effects: 1980 cm ²			
Frequency and duration of use			
Duration of activity: 1 - 4 hour(s)			
Frequency of use: 5 days / week(s)			
Technical conditions and measures to control dispersion from source towards the worker			
Local exhaust ventilation: No			
Conditions and measures related to personal protection, hygiene and health evaluation			
Respiratory protection: No			
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]			
Other given operational conditions affecting workers exposure			
Place of use: Indoor			
Domain: Professional			
SECTION 3: 1.9 Exposure estimation			
3.1. Environment			
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed			
3.2. Worker			
Contributing scenario controlling worker exposure: Use in closed process, no likelihood of exposure (PROC 1)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	0.0133508 mg/m ³	130 mg/m ³	0.001027
Inhalation, Systemic effects, Short term	0.534032 mg/m ³	130 mg/m ³	0.004108
Dermal, Systemic effects, Long Term	0.034286 mg/kg bw/day	20 mg/kg bw/day	0.001714
Dermal, Systemic effects, Short term	0.034286 mg/kg bw/day	20 mg/kg bw/day	0.001714
Combined routes, Systemic effects, Long Term	0.053358 mg/kg bw/day	-	0.002741
Combined routes, Systemic effects, Short term	0.110576 mg/kg bw/day	-	0.005822
Contributing scenario controlling worker exposure: Use in closed, continuous process with occasional controlled exposure			



Methanol

(PROC 2)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	0.274286 mg/kg bw/day	20 mg/kg bw/day	0.013174
Dermal, Systemic effects, Short term	0.274286 mg/kg bw/day	20 mg/kg bw/day	0.013174
Inhalation, Systemic effects, Long Term	13.351 mg/m ³	130 mg/m ³	0.102698
Inhalation, Systemic effects, Short term	53.403 mg/m ³	130 mg/m ³	0.410794
Combined routes, Systemic effects, Long Term	2.182 mg/kg bw/day	-	0.116413
Combined routes, Systemic effects, Short term	7.903 mg/kg bw/day	-	0.424508
Contributing scenario controlling worker exposure: Use in closed batch process (synthesis or formulation) (PROC 3)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	0.137143 mg/kg bw/day	20 mg/kg bw/day	0.006857
Dermal, Systemic effects, Short term	0.137143 mg/kg bw/day	20 mg/kg bw/day	0.006857
Inhalation, Systemic effects, Long Term	26.702 mg/m ³	130 mg/m ³	0.205397
Inhalation, Systemic effects, Short term	106.806 mg/m ³	130 mg/m ³	0.821587
Combined routes, Systemic effects, Long Term	3.952 mg/kg bw/day	-	0.212254
Combined routes, Systemic effects, Short term	15.395 mg/kg bw/day	-	0.828444
Contributing scenario controlling worker exposure: Transfer of chemicals from / to vessel / large containers at non-dedicated facilities (PROC 8a)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	0.137143 mg/kg bw/day	20 mg/kg bw/day	0.006857
Dermal, Systemic effects, Short term	0.137143 mg/kg bw/day	20 mg/kg bw/day	0.006857
Inhalation, Systemic effects, Long Term	33.377 mg/m ³	130 mg/m ³	0.256746



Methanol

Inhalation, Systemic effects, Short term	66.754 mg/m ³	130 mg/m ³	0.513492
Combined routes, Systemic effects, Long Term	4.905 mg/kg bw/day	-	0.263603
Combined routes, Systemic effects, Short term	9.673 mg/kg bw/day	-	0.520349
Contributing scenario controlling worker exposure: Transfer of chemicals from / to vessel / large containers at dedicated facilities (PROC 8b)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	0.137143 mg/kg bw/day	20 mg/kg bw/day	0.006857
Dermal, Systemic effects, Short term	0.137143 mg/kg bw/day	20 mg/kg bw/day	0.006857
Inhalation, Systemic effects, Long Term	16.688 mg/m ³	130 mg/m ³	0.128373
Inhalation, Systemic effects, Short term	33.377 mg/m ³	130 mg/m ³	0.256746
Combined routes, Systemic effects, Long Term	2.521 mg/kg bw/day	-	0.13523
Combined routes, Systemic effects, Short term	4.905 mg/kg bw/day	-	0.263603
Contributing scenario controlling worker exposure: Using material as fuel sources, limited exposure to unburned product to be expected (PROC 16)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	0.068571 mg/kg bw/day	20 mg/kg bw/day	0.003429
Dermal, Systemic effects, Short term	0.041143 mg/kg bw/day	20 mg/kg bw/day	0.002057
Inhalation, Systemic effects, Long Term	66.754 mg/m ³	130 mg/m ³	0.513492
Inhalation, Systemic effects, Short term	112.147 mg/m ³	130 mg/m ³	0.862667
Combined routes, Systemic effects, Long Term	9.605 mg/kg bw/day	-	0.516921
Combined routes, Systemic effects, Short term	16.062 mg/kg bw/day	-	0.864724
Contributing scenario controlling worker exposure: Hand-mixing with intimate contact and only PPE available (PROC 19)			



Methanol

Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	1.697 mg/kg bw/day	20 mg/kg bw/day	0.084857
Dermal, Systemic effects, Short term	1.697 mg/kg bw/day	20 mg/kg bw/day	0.084857
Inhalation, Systemic effects, Long Term	40.052 mg/m³	130 mg/m³	0.308095
Inhalation, Systemic effects, Short term	13.351 mg/m³	130 mg/m³	0.102698
Combined routes, Systemic effects, Long Term	7.419 mg/kg bw/day	-	0.392952
Combined routes, Systemic effects, Short term	3.604 mg/kg bw/day	-	0.187556
SECTION 4: 1.10 Guidance to DU to evaluate whether he works inside the boundaries set by the ES			
4.1 Health			
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.			
4.2 Environment			
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling could be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use, additional RMMs or a site-specific chemical safety assessment is required.			



Methanol

4. Exposure Scenario 4: Industrial use in cleaning agent

SECTION 1:	Title of exposure scenario
	Industrial use in cleaning agent
Contributing scenario controlling environmental exposure	
Industrial use of processing aids	ERC4
Contributing scenario controlling worker exposure	
Use in closed process, no likelihood of exposure	PROC1
Use in closed, continuous process with occasional controlled exposure	PROC2
Use in closed batch process (synthesis or formulation)	PROC3
Use in batch and other process (synthesis) where opportunity for exposure arises	PROC4
Industrial spraying	PROC7
Transfer of chemicals from / to vessel / large containers at non-dedicated facilities	PROC8a
Transfer of chemicals from / to vessel / large containers at dedicated facilities	PROC8b
Roller application or brushing	PROC10
Treatment of articles by dipping and pouring	PROC13
SECTION 2:	Conditions of use
2.1	Contributing scenario controlling environmental exposure: Industrial use of processing aids (ERC 8b)
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed	
2.2	Contributing scenario controlling worker exposure: 1.2 Use in closed process, no likelihood of exposure (PROC 1)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 % Physical form of the used product: Liquid Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 240 cm ² Exposed skin surface, Short term, Systemic effects: 240 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: No	
Conditions and measures related to personal protection, hygiene and health evaluation	



Methanol

Respiratory protection: No	
Dermal protection: No	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Industrial	
2.3	Contributing scenario controlling worker exposure: 1.3 Use in closed, continuous process with occasional controlled exposure (PROC 2)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 %	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 480 cm ²	
Exposed skin surface, Short term, Systemic effects: 480 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Industrial	
2.4	Contributing scenario controlling worker exposure: 1.4 Use in closed batch process (synthesis or formulation) (PROC 3)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 %	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 240 cm ²	
Exposed skin surface, Short term, Systemic effects: 240 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	



Methanol

Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Industrial	
2.5	Contributing scenario controlling worker exposure: 1.5 Use in batch and other process (synthesis) where opportunity for exposure arises (PROC4)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 %	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 480 cm ²	
Exposed skin surface, Short term, Systemic effects: 480 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Industrial	
2.6	Contributing scenario controlling worker exposure: 1.6 Industrial spraying (PROC 7)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 25 %	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 1500 cm ²	



Methanol

Exposed skin surface, Short term, Systemic effects: 1500 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: No	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: Yes [Effectiveness, 90%]	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Industrial	
Ventilation: Good (30%)	
2.7	Contributing scenario controlling worker exposure: 1.7 Transfer of chemicals from / to vessel / large containers at non-dedicated facilities (PROC 8a)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 100 %	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 960 cm ²	
Exposed skin surface, Short term, Systemic effects: 960 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Industrial	
2.8	Contributing scenario controlling worker exposure: 1.8 Transfer of chemicals from / to vessel / large containers at dedicated facilities (PROC 8b)



Methanol

Product characteristics	
Percentage (w/w) of substance in mixture/article: 10%	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 960 cm ²	
Exposed skin surface, Short term, Systemic effects: 960 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 95%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	
Place of use: Indoor	
Domain: Industrial	
2.9	Contributing scenario controlling worker exposure: 1.9 Roller application or brushing (PROC 10)
Product characteristics	
Percentage (w/w) of substance in mixture/article: 80%	
Physical form of the used product: Liquid	
Dustiness: High	
Human factors not influenced by risk management	
Exposed skin surface, Long Term, Systemic effects: 960 cm ²	
Exposed skin surface, Short term, Systemic effects: 960 cm ²	
Frequency and duration of use	
Duration of activity: > 4 hour(s) (default)	
Frequency of use: 5 days / week(s)	
Technical conditions and measures to control dispersion from source towards the worker	
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]	
Conditions and measures related to personal protection, hygiene and health evaluation	
Respiratory protection: No	
Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]	
Other given operational conditions affecting workers exposure	



Methanol

Place of use: Indoor Domain: Industrial			
2.10		Contributing scenario controlling worker exposure: 1.10 Treatment of articles by dipping and pouring (PROC 13)	
Product characteristics			
Percentage (w/w) of substance in mixture/article: 100% Physical form of the used product: Liquid Dustiness: High			
Human factors not influenced by risk management			
Exposed skin surface, Long Term, Systemic effects: 480 cm ² Exposed skin surface, Short term, Systemic effects: 480 cm ²			
Frequency and duration of use			
Duration of activity: > 4 hour(s) (default) Frequency of use: 5 days / week(s)			
Technical conditions and measures to control dispersion from source towards the worker			
Local exhaust ventilation: Yes [Effectiveness, Inhalation: 90%]			
Conditions and measures related to personal protection, hygiene and health evaluation			
Respiratory protection: No Dermal protection: Gloves APF 5 [Effectiveness, Dermal: 80%]			
Other given operational conditions affecting workers exposure			
Place of use: Indoor Domain: Industrial			
SECTION 3:		1.11 Exposure estimation	
3.1. Environment			
As no environmental hazard was identified no environmental-related exposure assessment and risk characterization was performed			
3.2. Worker			
Contributing scenario controlling worker exposure: Use in closed process, no likelihood of exposure (PROC 1)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Inhalation, Systemic effects, Long Term	0.013351 mg/m ³	130 mg/m ³	0.000103
Inhalation, Systemic effects, Short term	0.053403 mg/m ³	130 mg/m ³	0.000411
Dermal, Systemic effects, Long Term	0.034286 mg/kg bw/day	20 mg/kg bw/day	0.001714
Dermal, Systemic effects, Short term	0.034286 mg/kg bw/day	20 mg/kg bw/day	0.001714



Methanol

Combined routes, Systemic effects, Long Term	0.036193 mg/kg bw/day	-	0.001817
Combined routes, Systemic effects, Short term	0.041915 mg/kg bw/day	-	0.002125
Contributing scenario controlling worker exposure: Use in closed, continuous process with occasional controlled exposure (PROC 2)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	0.274286 mg/kg bw/day	20 mg/kg bw/day	0.013174
Dermal, Systemic effects, Short term	0.274286 mg/kg bw/day	20 mg/kg bw/day	0.013174
Inhalation, Systemic effects, Long Term	3.338 mg/m ³	130 mg/m ³	0.025675
Inhalation, Systemic effects, Short term	13.351 mg/m ³	130 mg/m ³	0.102698
Combined routes, Systemic effects, Long Term	0.7511 mg/kg bw/day	-	0.039389
Combined routes, Systemic effects, Short term	2.182 mg/kg bw/day	-	0.116413
Contributing scenario controlling worker exposure: Use in closed batch process (synthesis or formulation) (PROC 3)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	0.137143 mg/kg bw/day	20 mg/kg bw/day	0.006857
Dermal, Systemic effects, Short term	0.137143 mg/kg bw/day	20 mg/kg bw/day	0.006857
Inhalation, Systemic effects, Long Term	6.675 mg/m ³	130 mg/m ³	0.051349
Inhalation, Systemic effects, Short term	26.702 mg/m ³	130 mg/m ³	0.205397
Combined routes, Systemic effects, Long Term	1.091 mg/kg bw/day	-	0.058206
Combined routes, Systemic effects, Short term	3.952 mg/kg bw/day	-	0.212254
Contributing scenario controlling worker exposure: Use in batch and other process (synthesis) where opportunity for exposure arises (PROC 4)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects,	1.371 mg/kg bw/day	20 mg/kg bw/day	0.0068571



Methanol

Long Term			
Dermal, Systemic effects, Short term	1.371 mg/kg bw/day	20 mg/kg bw/day	0.0068571
Inhalation, Systemic effects, Long Term	13.351 mg/m ³	130 mg/m ³	0.102698
Inhalation, Systemic effects, Short term	53.403 mg/m ³	130 mg/m ³	0.410794
Combined routes, Systemic effects, Long Term	3.279 mg/kg bw/day	-	0.17127
Combined routes, Systemic effects, Short term	9 mg/kg bw/day	-	0.479365
Contributing scenario controlling worker exposure: Industrial spraying (PROC 7)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	2.143 mg/kg bw/day	20 mg/kg bw/day	0.107143
Dermal, Systemic effects, Short term	2.143 mg/kg bw/day	20 mg/kg bw/day	0.107143
Inhalation, Systemic effects, Long Term	19.14 mg/m ³	130 mg/m ³	0.147231
Inhalation, Systemic effects, Short term	19.14 mg/m ³	130 mg/m ³	0.147231
Combined routes, Systemic effects, Long Term	4.877 mg/kg bw/day	-	0.254374
Combined routes, Systemic effects, Short term	4.877 mg/kg bw/day	-	0.254374
Contributing scenario controlling worker exposure: Transfer of chemicals from / to vessel / large containers at non-dedicated facilities (PROC 8a)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Dermal, Systemic effects, Short term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Inhalation, Systemic effects, Long Term	33.377 mg/m ³	130 mg/m ³	0.256746
Inhalation, Systemic effects, Short term	66.754 mg/m ³	130 mg/m ³	0.513492
Combined routes, Systemic	7.511 mg/kg bw/day	-	0.393889



Methanol

effects, Long Term			
Combined routes, Systemic effects, Short term	12.279 mg/kg bw/day	-	0.650635
Contributing scenario controlling worker exposure: Transfer of chemicals from / to vessel / large containers at dedicated facilities (PROC 8b)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Dermal, Systemic effects, Short term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Inhalation, Systemic effects, Long Term	10.013 mg/m ³	130 mg/m ³	0.077024
Inhalation, Systemic effects, Short term	20.026 mg/m ³	130 mg/m ³	0.154048
Combined routes, Systemic effects, Long Term	4.173 mg/kg bw/day	-	0.214167
Combined routes, Systemic effects, Short term	5.604 mg/kg bw/day	-	0.29119
Contributing scenario controlling worker exposure: Roller application or brushing (PROC 10)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	4.389 mg/kg bw/day	20 mg/kg bw/day	0.219429
Dermal, Systemic effects, Short term	4.389 mg/kg bw/day	20 mg/kg bw/day	0.219429
Inhalation, Systemic effects, Long Term	26.702 mg/m ³	130 mg/m ³	0.205397
Inhalation, Systemic effects, Short term	53.403 mg/m ³	130 mg/m ³	0.410794
Combined routes, Systemic effects, Long Term	8.203 mg/kg bw/day	-	0.424825
Combined routes, Systemic effects, Short term	12.018 mg/kg bw/day	-	0.630222
Contributing scenario controlling worker exposure: Treatment of articles by dipping and pouring (PROC 13)			
Exposure route	Exposure estimate - Worker	DNEL	Risk quantification (RCR)
Dermal, Systemic effects, Long Term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143
Dermal, Systemic effects, Short term	2.743 mg/kg bw/day	20 mg/kg bw/day	0.137143



Methanol

Short term			
Inhalation, Systemic effects, Long Term	33.377 mg/m³	130 mg/m³	0.256746
Inhalation, Systemic effects, Short term	66.754 mg/m³	130 mg/m³	0.513492
Combined routes, Systemic effects, Long Term	7.511 mg/kg bw/day	-	0.393889
Combined routes, Systemic effects, Short term	12.279 mg/kg bw/day	-	0.650635
SECTION 4: 1.12 Guidance to DU to evaluate whether he works inside the boundaries set by the ES			
4.1 Health			
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.			
4.2 Environment			
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling could be necessary to define appropriate site-specific risk management measures. If scaling reveals a condition of unsafe use, additional RMMs or a site-specific chemical safety assessment is required.			