

This safety data sheet was created pursuant to the requirements of:
UK REACH Regulations (SI 2019/758 as amended)

Supersedes date 26-Dec-2016

Revision date 27-Mar-2025

Revision Number 4

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

1.1. Product identifier

Product Code(s)	2591
Safety data sheet number	2591
Product Name	2-(2-METHOXYETHOXY)ETHANOL
Index No	603-107-00-6
EC Number	203-906-6
CAS No	111-77-3
Synonyms	2-(2-METHOXYETHOXY) ETHANOL, AL41, METHYL CARBITOL, METHYL DIGLYCOL, NYCOSOL 13, METHYL CARBITOL SOLV FUEL ADDIT, AL41 (M. DIETHOXOL DERD2451), MDGE
Pure substance/mixture	Substance

Contains 2-(2-METHOXYETHOXY)ETHANOL

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

Recommended use	Fuel additive Industrial application Manufacture of substance Formulation & (re)packing of substances and mixtures. Intermediate Use in process chemicals Use in polymer processing. Coatings Paint remover Professional use Cleaning agent Functional fluids For further information, see attached Exposure Scenario
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1.3. Details of the supplier of the safety data sheet

Supplier

Univar Solutions UK Ltd
Aquarius House
6 Mid Point Business Park
Bradford
GBR

For further information, please contact

E-mail address SDS.EMEA@univarsolutions.com

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

1.4. Emergency telephone number

Emergency Telephone SGS - +32 (0)3 575 55 55 (24h)

SECTION 2: Hazards identification**2.1. Classification of the substance or mixture**

Reproductive toxicity	Category 1B - (H360d)
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2.2. Label elements

Contains 2-(2-METHOXYETHOXY)ETHANOL



Signal word
Danger

Hazard statements

H360D - May damage the unborn child

Precautionary statements

P202 - Do not handle until all safety precautions have been read and understood
 P280 - Wear protective gloves/protective clothing/eye protection/face protection
 P308 + P313 - IF exposed or concerned: Get medical advice/attention
 P405 - Store locked up

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients**3.1 Substances**

Chemical name	Weight-%	EC No (EU Index No)	UK REACH registration number	Classification according to GB CLP (SI 2020/1567 as amended)	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
2-(2-METHOXYETHOXY)ETHANOL 111-77-3	>=99%	203-906-6	-	Repr. 1B (H360d)	-	-	-
2-METHOXYETHANOL 109-86-4	<0.3%	203-713-7	-	Repr. 1B (H360FD) Flam. Liq. 3 (H226) Acute Tox. 4 (H332) Acute Tox. 4 (H302) Acute Tox. 4 (H312)	-	-	-

Full text of H- and EUH-phrases: see section 16

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (UK REACH Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.
Inhalation	Remove to fresh air. Get medical attention if symptoms occur.
Eye contact	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention if irritation develops and persists.
Skin contact	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Get medical attention if symptoms occur.
Ingestion	Rinse mouth thoroughly with water. (Get medical attention immediately if symptoms occur).

4.2. Most important symptoms and effects, both acute and delayed

Eyes	May cause redness and tearing of the eyes.
Ingestion	May cause gastrointestinal discomfort if consumed in large amounts Nausea Vomiting

4.3. Indication of any immediate medical attention and special treatment needed

Note to doctors	Treat symptomatically.
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SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media	Dry chemical, CO ₂ , alcohol-resistant foam or water spray.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products	Carbon oxides.
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5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	Keep away from flames and hot surfaces. - No smoking. Keep people away from and upwind of spill/leak. Keep personnel out of low areas.
For emergency responders	Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions Do not allow runoff to sewer, waterway or ground.

6.3. Methods and material for containment and cleaning up

Methods for containment Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Methods for cleaning up Dam spills and pump to remove. Flush area with flooding quantities of water.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Keep away from heat, sparks and open flame. Use spark-proof tools and explosion-proof equipment. Keep out of drains, sewers, ditches and waterways. Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Do not eat, drink or smoke when using this product. Remove contaminated clothing and shoes.

General hygiene considerations Do not eat, drink or smoke when using this product. Take off all contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. Remove contaminated clothing and protective equipment before entering eating areas. Wash hands and face before breaks and immediately after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep container tightly closed in a dry and well-ventilated place. Store away from incompatible materials. See section 10 for more information. Suitable container/equipment material: Steel, stainless steel. Unsuitable container/equipment material: copper, Aluminium.

7.3. Specific end use(s)

Specific use(s)
See section 1 for more information.

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits

Chemical name	United Kingdom
2-(2-METHOXYETHOXY)ETHANOL 111-77-3	TWA: 10 ppm TWA: 50.1 mg/m ³ STEL: 30 ppm STEL: 150.3 mg/m ³ Sk*

Biological occupational exposure This product, as supplied, does not contain any hazardous materials with biological limits

limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL) - Workers

Chemical name	Oral	Dermal	Inhalation
2-(2-METHOXYETHOXY)ETHANOL 111-77-3		2.22 mg/kg bw/day [4] [6]	50.1 mg/m ³ [4] [6]

[4] Systemic health effects.
[6] Long term.

Derived No Effect Level (DNEL) - General Public

Chemical name	Oral	Dermal	Inhalation
2-(2-METHOXYETHOXY)ETHANOL 111-77-3	7.5 mg/kg/day [4] [6]	1.33 mg/kg/day [4] [6]	30.1 mg/m ³ [4] [6]

[4] Systemic health effects.
[6] Long term.

Predicted No Effect Concentration (PNEC)

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
2-(2-METHOXYETHOXY) ETHANOL 111-77-3	12 mg/l	12 mg/L	1.2 mg/l		

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
2-(2-METHOXYETHOXY) ETHANOL 111-77-3	44.4 mg/kg	0.44 mg/kg	10000 mg/L	2.1 mg/kg soil dw	0.09 g/kg food

8.2. Exposure controls

Engineering controls

Ensure adequate ventilation. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use non sparking handtools and explosion-proof electric equipment. Respiratory protection must be used if air contamination exceeds acceptable level.

Personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles). Use eye protection according to EN 166.

Hand protection

Wear suitable gloves. Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Gloves must conform to standard EN 374.

Gloves			
Duration of contact	PPE - Glove material	Glove thickness	Break through time
	Butyl rubber		
	Neoprene gloves		
	Viton™		
	Rubber (natural, latex)		
	Nitrile rubber		
	PVC		

Skin and body protection

Wear suitable protective clothing.

Respiratory protection	In case of inadequate ventilation wear respiratory protection.
Recommended filter type:	full face mask (DIN EN 136). Type A.
General hygiene considerations	Do not eat, drink or smoke when using this product. Take off all contaminated clothing and wash it before reuse. Contaminated work clothing should not be allowed out of the workplace. Remove contaminated clothing and protective equipment before entering eating areas. Wash hands and face before breaks and immediately after handling the product.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Oily liquid
Colour	Colourless clear
Odour	Mild. Ether.
Odour threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks • Method</u>
Melting point / freezing point	< -84 °C	
Initial boiling point and boiling range	193 °C	
Flammability		No information available.
Flammability Limit in Air		No information available.
Upper flammability or explosive limits	9.5%	
Lower flammability or explosive limits	1.5%	
Flash point	91 °C	Closed cup.
Autoignition temperature	215 °C	
Decomposition temperature		No information available.
pH		No information available.
pH (as aqueous solution)		No information available.
Kinematic viscosity		No information available.
Dynamic viscosity	3.9 mPa s	@ 20 °C.
Water solubility	Soluble in water	
Solubility(ies)		No information available.
Partition coefficient	log Kow: 0.47	
Vapour pressure	0.33 hPa	@ 20 °C.
Relative density	1.02	@ 20 °C.
Bulk density	1020 kg/m ³	@ 20 °C
Liquid Density	No information available	No information available
Relative vapour density	4.1	
Particle characteristics		No information available.
Particle Size	No information available	
Particle Size Distribution	No information available	
Explosive properties	No information available	
Oxidising properties	No information available	

9.2. Other information 0.02

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	Temperature above flashpoint: higher fire/explosion hazard.
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10.2. Chemical stability

Stability	Hygroscopic.
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Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions Air. Bases.

10.4. Conditions to avoid

Conditions to avoid Keep away from open flames, hot surfaces and sources of ignition. Use spark-proof tools and explosion-proof equipment.

10.5. Incompatible materials

Incompatible materials Oxidising agents. Strong bases. Metals. Water. Protect from moisture.

10.6. Hazardous decomposition products

Hazardous decomposition products Carbon oxides.

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Information on likely routes of exposure****Product Information**

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion Specific test data for the substance or mixture is not available.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity**Numerical measures of toxicity****Component Information**

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
2-(2-METHOXYETHOXY)ETHANOL	= 7128 mg/kg (Mouse) = 4160 mg/kg (Guinea Pig)	= 9404 mg/kg (Rabbit)	> 1.2 mg/l (Rat) 6h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation Based on available data the classification criteria are not met.

2-(2-METHOXYETHOXY)ETHANOL (111-77-3)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 404: Acute Dermal Irritation/Corrosion	Rabbit	Dermal		24, 48, 72 hours	non-irritant

Serious eye damage/eye irritation Based on available data the classification criteria are not met.

2-(2-METHOXYETHOXY)ETHANOL (111-77-3)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 405: Acute Eye Irritation/Corrosion	Rabbit	eye		24, 48, 72 hours	non-irritant

Respiratory or skin sensitisation Based on available data the classification criteria are not met.

2-(2-METHOXYETHOXY)ETHANOL (111-77-3)

Method	Species	Exposure route	Results
OECD Test No. 406: Skin Sensitisation	Guinea pig	Dermal	Not a skin sensitiser
Human patch test	Human evidence	Dermal	Not a skin sensitiser

Germ cell mutagenicity Based on available data the classification criteria are not met.

Component Information

2-(2-METHOXYETHOXY)ETHANOL (111-77-3)

Method	Species	Results
OECD Test No. 471: Bacterial Reverse Mutation Test	Bacteria	Negative
OECD Test No. 471: Bacterial Reverse Mutation Test	Mouse	Negative

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

Reproductive toxicity Contains a known or suspected reproductive toxin. Classification based on data available for ingredients. May damage the unborn child.

The table below indicates ingredients above the cut-off threshold considered as relevant which are listed as reproductive toxins.

Chemical name	United Kingdom
2-(2-METHOXYETHOXY)ETHANOL	Repr. 2

2-(2-METHOXYETHOXY)ETHANOL (111-77-3)

Method	Species	Results
OECD Test No. 414: Pre-natal Development Toxicity Study	Rat	Negative
OECD Test No. 414: Pre-natal Development Toxicity Study	Rat	Negative
OECD Test No. 416: Two-Generation Reproduction Toxicity	Mouse	Negative
	Expert judgment and weight of evidence determination	Suspected of damaging the unborn child.

STOT - single exposure Based on available data the classification criteria are not met.

STOT - repeated exposure Based on available data the classification criteria are not met.

Component Information

2-(2-METHOXYETHOXY)ETHANOL (111-77-3)

Method	Species	Exposure route	Effective dose	Exposure time	Results
OECD Test No. 407: Repeated Dose 28-day Oral Toxicity Study in Rodents	Rat	Oral	900 mg/kg bw/d	6 weeks	Not classified
OECD Test No. 411: Sub-chronic Dermal Toxicity: 90-day Study	Guinea pig	Dermal	40 mg/kg bw/d	13 weeks	Not classified

OECD Test No. 413: Sub-chronic Inhalation Toxicity: 90-day Study	Rat	Inhalation	> 1060 mg/m ³	13 weeks	Not classified
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Aspiration hazard Based on available data the classification criteria are not met.

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

Ecotoxicity Not considered to be harmful to aquatic life.

2-(2-METHOXYETHOXY)ETHANOL (111-77-3)

Method	Species	Endpoint type	Effective dose	Exposure time	Results
OECD Test No. 203: Fish, Acute Toxicity Test	Pimephales promelas	LC50	5741 mg/L	96 hours	
OECD Test No. 203: Fish, Acute Toxicity Test	Lepomis macrochirus	LC50	7500 mg/L	96 hours	
	Carassius auratus	LC50	>5000 mg/L	24 hours	
	Fish	LC50	1805 mg/L	48 hours	
	Daphnia magna	EC50	1192 mg/L	48 hours	
OECD Test No. 202: Daphnia sp., Acute Immobilisation Test	Daphnia magna	EC50	>1000 mg/L	48 hours	
EU Method C.2	Daphnia magna	EC50	>500 mg/L	48 hours	
OECD Test No. 201: Freshwater Algae and Cyanobacteria, Growth Inhibition Test	Pseudokirchneriella subcapitata	EbC50	>1000 mg/L	96 hours	
DIN 38412	Desmodesmus subspicatus	EC50	>500 mg/L	72 hours	
DIN 38412	Desmodesmus subspicatus	EC20	>500 mg/L	72 hours	
OECD Test No. 209: Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)	activated sludge	EC50	>1000 mg/L	30 minutes	
	Pseudomonas putida	EC10	>10000 mg/L	17 hours	
OECD Test No. 209: Activated Sludge, Respiration Inhibition Test (Carbon and Ammonium Oxidation)	Toxicity to microorganisms	EC10	>1995 mg/L	30 minutes	
	Toxicity to microorganisms	IC50	>5000 mg/L	16 hours	
	Other aquatic organisms	EC0	>100 mg/L		

12.2. Persistence and degradability

Persistence and degradability Readily biodegradable.

2-(2-METHOXYETHOXY)ETHANOL (111-77-3)

Method	Exposure time	Value	Results
OECD Test No. 301B: Ready Biodegradability: CO2 Evolution Test (TG 301 B)	28 days	100% Biodegradation	Readily biodegradable

OECD Test No. 301D: Ready Biodegradability: Closed Bottle Test (TG 301 D)	28 days	70% Biodegradation	Readily biodegradable
OECD Test No. 301F: Ready Biodegradability: Manometric Respirometry Test (TG 301 F)	28 days	80-90% Biodegradation	Readily biodegradable

12.3. Bioaccumulative potential

Bioaccumulation Not likely to bioaccumulate.

Component Information

Chemical name	Partition coefficient
2-(2-METHOXYETHOXY)ETHANOL	-0.47

12.4. Mobility in soil

Mobility in soil Not expected to adsorb on soil.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB.

Chemical name	PBT and vPvB assessment
2-(2-METHOXYETHOXY)ETHANOL	The substance is not PBT / vPvB

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations**13.1. Waste treatment methods**

Waste from residues/unused products Waste is classified as hazardous waste. Disposal to licensed waste disposal site in accordance with the local Waste Disposal Authority.

Contaminated packaging Do not reuse empty containers.

SECTION 14: Transport information**IATA**

14.1 UN number or ID number Not regulated

14.2

14.3 Transport hazard class(es) Not regulated

14.4 Packing group Not regulated

14.5 Environmental hazards Not applicable

14.6 Special precautions for user

Special Provisions None

IMDG

14.1 UN number or ID number Not regulated

14.3 Transport hazard class(es) Not regulated

14.4 Packing group Not regulated

14.5 Environmental hazards Not applicable

14.6 Special precautions for user

Special Provisions None

14.7 Maritime transport in bulk according to IMO instruments No information available

RID

14.1 UN number or ID number Not regulated

14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	
Special Provisions	None

ADR

14.1 UN number or ID number	Not regulated
14.2 UN proper shipping name	Not regulated
14.3 Transport hazard class(es)	Not regulated
14.4 Packing group	Not regulated
14.5 Environmental hazards	Not applicable
14.6 Special precautions for user	
Special Provisions	None

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations****Authorisations and/or restrictions on use:**

This product contains one or more substances subject to restriction (UK REACH - Annex XVII).

This product does not contain substances subject to authorisation (UK REACH - Annex XIV).

Product restricted per REACH Annex XVII: 3

Chemical name	Restricted substance per REACH Annex XVII	Substance subject to authorisation per REACH Annex XIV
2-(2-METHOXYETHOXY)ETHANOL - 111-77-3	Use restricted. See item 54.	-

Persistent Organic Pollutants

Not applicable

Export Notification requirements

Not applicable

Named dangerous substances per COMAH Regulations 2015 (as amended)

Not applicable

The Ozone-Depleting Substances Regulations 2015

Not applicable

The Biocidal Products Regulations 2001 (as amended)

Not applicable

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended)

Not applicable

Poisons Act 1972 (Explosive Precursors) Regulations (as Amended)

Not applicable

International Inventories

TSCA	Contact supplier for inventory compliance status
DSL/NDL	Contact supplier for inventory compliance status
EINECS/ELINCS	Contact supplier for inventory compliance status
ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECI	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIIC	Contact supplier for inventory compliance status
NZIoC	Contact supplier for inventory compliance status

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

15.2. Chemical safety assessment

Chemical Safety Report No information available

SECTION 16: Other information

Key or legend to abbreviations and acronyms used in the safety data sheet

Full text of H-Statements referred to under section 3

H226 - Flammable liquid and vapour
 H302 - Harmful if swallowed
 H312 - Harmful in contact with skin
 H332 - Harmful if inhaled
 H360D - May damage the unborn child
 H360FD - May damage fertility. May damage the unborn child

Legend

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		

Revision Note ***Indicates updated data since last publication SDS sections updated 1 3 4 5 6 8 11 12 9 2

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity	Calculation method
Acute dermal toxicity	Calculation method
Acute inhalation toxicity - gas	Calculation method
Acute inhalation toxicity - vapour	Calculation method
Acute inhalation toxicity - dust/mist	Calculation method
Skin corrosion/irritation	Calculation method
Serious eye damage/eye irritation	Calculation method
Respiratory sensitisation	Calculation method
Skin sensitisation	Calculation method
Mutagenicity	Calculation method
Carcinogenicity	Calculation method
STOT - single exposure	Calculation method
STOT - repeated exposure	Calculation method
Acute aquatic toxicity	Calculation method
Chronic aquatic toxicity	Calculation method
Aspiration hazard	Calculation method
Ozone	Calculation method

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
 U.S. Environmental Protection Agency ChemView Database
 European Food Safety Authority (EFSA)
 European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
 European Chemicals Agency (ECHA) (ECHA_API)
 Environmental Protection Agency
 Acute Exposure Guideline Level(s) (AEGl(s))
 U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act

U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Prepared By Amy Whitfield

Supersedes date 26-Dec-2016

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**This material safety data sheet complies with the requirements of UK REACH Regulations (SI 2019/758 as amended)
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work**

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name 2-(2-METHOXYETHOXY) ETHANOL
Pure substance/mixture Substance
REACH registration number 01-2119475100-52-XXXX
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Formulation & (re)packing of substances and mixtures
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC2 - Formulation of preparations (mixtures)
Process category(ies) PROC3 - Use in closed batch process (synthesis or formulation)
 PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
 PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
 PROC15 - Use as laboratory reagent
 PROC28 - Manual maintenance (cleaning and repair) of machinery
Product category(ies) PC9a - Coatings and paints, thinners, paint removers PC9b - Fillers, putties, plasters, modelling clay PC12 - Fertilisers PC13 - Fuels PC17 - Hydraulic fluids PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents PC35 - Washing and cleaning products (including solvent based products)

Product Name 2-(2-METHOXYETHOXY) ETHANOL
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)

Covers concentrations up to 100%
Amounts used

Type	Daily amount per site
Value	20,000
Units	kg/d

Type	Annual amount per site
Value	2000
Units	t(ons)/year

Product characteristics

Physical form of product	Liquid
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Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment	2000 m3/d
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plant flow	
Sludge treatment	No application of sewage sludge to soil

Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Onsite wastewater treatment required
Additional good practice advice beyond the REACH Chemical Safety Report	Bund storage facilities to prevent soil and water pollution in the event of spillage Site should have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases A leak prevention plan is needed to prevent low level continual releases

Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations Dispose of waste or used sacks/containers according to local regulations
Waste treatment methods	`
Efficiency of at least	99.98%

Control of worker exposure

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	General exposures (closed systems)
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Formulate in enclosed or ventilated mixing vessels Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMS in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Use in contained systems
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Handle substance within a predominantly closed system provided with extract ventilation Local exhaust ventilation - efficiency of at least 90% Formulate in enclosed or ventilated mixing vessels
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Operational conditions	Elevated temperature

Process category(ies)	PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)
Title	Mixing operations (open systems)
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Formulate in enclosed or ventilated mixing vessels Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Formulate in enclosed or ventilated mixing vessels Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Use drum pumps
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Formulate in enclosed or ventilated mixing vessels Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Transfer via enclosed lines Clear transfer lines prior to de-coupling
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
Title	Drum and small package filling
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to	Formulate in enclosed or ventilated mixing vessels Regular inspection and maintenance of

control dispersion from source towards the worker	equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC3 - Use in closed batch process (synthesis or formulation)
Title	Process sampling
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Formulate in enclosed or ventilated mixing vessels Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising
Title	Tabletting, compression, extrusion or pelletisation
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Formulate in enclosed or ventilated mixing vessels Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Formulate in enclosed or ventilated mixing vessels Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor

Assumes process temperature up to	20 C
Process category(ies)	PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Formulate in enclosed or ventilated mixing vessels Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Drain down system prior to equipment break-in or maintenance
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC2 - Formulation of preparations (mixtures)

Predicted No Effect Concentration (PNEC)

Freshwater	12 mg/l
Freshwater sediment	44.4 mg/kg
Marine water	1.2 mg/l
Marine sediment	0.44 mg/kg
Soil	2.1 mg/kg
Impact on Sewage Treatment	10000 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.632 mg/l	0.053
Freshwater sediment	2.651 mg/kg	0.06
Marine water	0.063 mg/l	0.053
Marine sediment	0.265 mg/kg	0.603
STP: Sewage Treatment Plant	6.312 mg/l	<0.01
Soil	0.0044 mg/kg	<0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	2.22 mg/kg/day
Worker - inhalative, long-term - systemic	50.1 mg/m ³

Calculation method Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	15.01 mg/m ³	0.3
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.069 mg/kg/day	0.031
PROC3 - Use in closed batch process	Worker - combined, long-term		0.331

(synthesis or formulation)	- systemic		
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	25.03 mg/m ³	0.5
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.069 mg/kg/day	0.031
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.531
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - inhalative, long-term - systemic	17.52 mg/m ³	0.35
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multi-stage and/or significant contact)	Worker - combined, long-term - systemic		0.659
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	5.006 mg/m ³	0.1
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - combined, long-term - systemic		0.409
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	5.006 mg/m ³	0.1
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - combined, long-term - systemic		0.409
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - inhalative, long-term - systemic	25.03 mg/m ³	0.5
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - dermal, long-term - systemic	0.343 mg/kg/day	0.155
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)	Worker - combined, long-term - systemic		0.654

PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	25.03 mg/m ³	0.5
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.343 mg/kg/day	0.155
PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.654
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - inhalative, long-term - systemic	25.03 mg/m ³	0.5
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - dermal, long-term - systemic	0.712 mg/kg/day	0.077
PROC14 - Production of preparations or articles by tableting, compression, extrusion, pelettising	Worker - combined, long-term - systemic		0.577
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	25.03 mg/m ³	0.5
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.017 mg/kg/day	<0.01
PROC15 - Use as laboratory reagent	Worker - combined, long-term - systemic		0.507
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	10.01 mg/m ³	0.2
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.509

Section 4 - Guidance to check compliance with the exposure scenario

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.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name 2-(2-METHOXYETHOXY) ETHANOL
Pure substance/mixture Substance
REACH registration number 01-2119475100-52-XXXX
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Use as an intermediate
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
 ERC2 - Formulation of preparations (mixtures)
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC15 - Use as laboratory reagent
 PROC28 - Manual maintenance (cleaning and repair) of machinery
Product Name 2-(2-METHOXYETHOXY) ETHANOL
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
 - ERC2 - Formulation of preparations (mixtures)

Covers concentrations up to 100%

Amounts used

Type	Daily amount per site
Value	12,500
Units	kg/d

Type	Annual amount per site
Value	250
Units	t(ons)/year

Product characteristics

Physical form of product	Liquid
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Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Sludge treatment	No application of sewage sludge to soil

Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Onsite wastewater treatment required
Additional good practice advice beyond the REACH Chemical Safety Report	Bund storage facilities to prevent soil and water pollution in the event of spillage Site should have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases A leak prevention plan is needed to prevent low level continual releases

Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations Dispose of waste or used sacks/containers according to local regulations
Waste treatment methods	`
Efficiency of at least	99.98%

Control of worker exposure

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Batch process
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs

the worker	followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Transfer via enclosed lines Clear transfer lines prior to de-coupling
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Drain down system prior to equipment break-in or maintenance
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)
- ERC2 - Formulation of preparations (mixtures)

Predicted No Effect Concentration (PNEC)

Freshwater	12 mg/l
Freshwater sediment	44.4 mg/kg
Marine water	1.2 mg/l
Marine sediment	0.44 mg/kg
Soil	2.1 mg/kg
Impact on Sewage Treatment	10000 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.79 mg/l	0.066
Freshwater sediment	3.313 mg/kg	0.075
Marine water	0.079 mg/l	0.066
Marine sediment	0.331 mg/kg	0.753
STP: Sewage Treatment Plant	7.89 mg/l	<0.01
Soil	0.00142 mg/kg	<0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	2.22 mg/kg/day
Worker - inhalative, long-term - systemic	50.1 mg/m ³

Calculation method Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.05 mg/m ³	<0.01
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.0017 mg/kg/day	<0.01
PROC1 - Use in closed process, no likelihood of exposure	Worker - combined, long-term - systemic		<0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	5.006 mg/m ³	0.1
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	0.069 mg/kg/day	0.031
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - combined, long-term - systemic		0.131
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	15.01 mg/m ³	0.3
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.069 mg/kg/day	0.031
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.331

PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	5.006 mg/m ³	0.1
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - combined, long-term - systemic		0.409
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	25.03 mg/m ³	0.5
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.017 mg/kg/day	<0.01
PROC15 - Use as laboratory reagent	Worker - combined, long-term - systemic		0.507
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	10.01 mg/m ³	0.2
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.509

Section 4 - Guidance to check compliance with the exposure scenario

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.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name 2-(2-METHOXYETHOXY) ETHANOL
Pure substance/mixture Substance
REACH registration number 01-2119475100-52-XXXX
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Use in process chemicals
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC2 - Use in closed, continuous process with occasional controlled exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC15 - Use as laboratory reagent
 PROC28 - Manual maintenance (cleaning and repair) of machinery
Product category(ies) PC40 - Extraction agents
Product Name 2-(2-METHOXYETHOXY) ETHANOL
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Covers concentrations up to 100%
Amounts used

Type	Daily amount per site
Value	12,500
Units	kg/d

Type	Annual amount per site
Value	1250
Units	t(ons)/year

Product characteristics

Physical form of product	Liquid
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Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Sludge treatment	No application of sewage sludge to soil

Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Onsite wastewater treatment required
Additional good practice advice beyond the REACH Chemical Safety Report	Bund storage facilities to prevent soil and water pollution in the event of spillage Site should have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases A leak prevention plan is needed to prevent low level continual releases

Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations Dispose of waste or used sacks/containers according to local regulations
Waste treatment methods	
Efficiency of at least	99.98%

Control of worker exposure

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC2 - Use in closed, continuous process with occasional controlled exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Batch process
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs

the worker	followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Transfer via enclosed lines Clear transfer lines prior to de-coupling
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC15 - Use as laboratory reagent
Title	Laboratory activities
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Drain down system prior to equipment break-in or maintenance
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Predicted No Effect Concentration (PNEC)

Freshwater	12 mg/l
Freshwater sediment	44.4 mg/kg
Marine water	1.2 mg/l
Marine sediment	0.44 mg/kg
Soil	2.1 mg/kg
Impact on Sewage Treatment	10000 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.791 mg/l	0.066
Freshwater sediment	3.32 mg/kg	0.075
Marine water	0.079 mg/l	0.066
Marine sediment	0.332 mg/kg	0.755
STP: Sewage Treatment Plant	7.907 mg/l	<0.01
Soil	0.00157 mg/kg	<0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	2.22 mg/kg/day
Worker - inhalative, long-term - systemic	50.1 mg/m ³

Calculation method Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.05 mg/m ³	<0.01
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.0017 mg/kg/day	<0.01
PROC1 - Use in closed process, no likelihood of exposure	Worker - combined, long-term - systemic		<0.01
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - inhalative, long-term - systemic	5.006 mg/m ³	0.1
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - dermal, long-term - systemic	0.069 mg/kg/day	0.031
PROC2 - Use in closed, continuous process with occasional controlled exposure	Worker - combined, long-term - systemic		0.131
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	15.01 mg/m ³	0.3
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.069 mg/kg/day	0.031
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.331
PROC8b - Transfer of substance or	Worker - inhalative, long-term	5.006 mg/m ³	0.1

preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	- systemic		
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - combined, long-term - systemic		0.409
PROC15 - Use as laboratory reagent	Worker - inhalative, long-term - systemic	25.03 mg/m ³	0.5
PROC15 - Use as laboratory reagent	Worker - dermal, long-term - systemic	0.017 mg/kg/day	<0.01
PROC15 - Use as laboratory reagent	Worker - combined, long-term - systemic		0.507
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	10.01 mg/m ³	0.2
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.509

Section 4 - Guidance to check compliance with the exposure scenario

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.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name 2-(2-METHOXYETHOXY) ETHANOL
Pure substance/mixture Substance
REACH registration number 01-2119475100-52-XXXX
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Use in polymer processing.
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Process category(ies) PROC3 - Use in closed batch process (synthesis or formulation)
 PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC13 - Treatment of articles by dipping and pouring
 PROC28 - Manual maintenance (cleaning and repair) of machinery
Product category(ies) PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents
Product Name 2-(2-METHOXYETHOXY) ETHANOL
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Covers concentrations up to 100%
Amounts used

Type	Daily amount per site
Value	5000
Units	kg/d

Type	Annual amount per site
Value	100
Units	t(ons)/year

Product characteristics

Physical form of product	Liquid
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Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Sludge treatment	No application of sewage sludge to soil

Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Onsite wastewater treatment required
Additional good practice advice beyond the REACH Chemical Safety Report	Bund storage facilities to prevent soil and water pollution in the event of spillage Site should have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases A leak prevention plan is needed to prevent low level continual releases

Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations Dispose of waste or used sacks/containers according to local regulations
Waste treatment methods	`
Efficiency of at least	99.98%

Control of worker exposure

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Batch process
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Batch process
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Handle substance within a predominantly closed system provided with extract ventilation Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	150 C
Operational conditions	Elevated temperature

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%

Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Bulk transfers
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Transfer via enclosed lines Clear transfer lines prior to de-coupling
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Provide a good standard of controlled ventilation (5 to 10 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Drain down system prior to equipment break-in or maintenance
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and	Assumes a good basic standard of occupational hygiene is implemented

exposure	
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Predicted No Effect Concentration (PNEC)

Freshwater	12 mg/l
Freshwater sediment	44.4 mg/kg
Marine water	1.2 mg/l
Marine sediment	0.44 mg/kg
Soil	2.1 mg/kg
Impact on Sewage Treatment	10000 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.00054 mg/l	<0.01
Freshwater sediment	0.0026 mg/kg	<0.01
Marine water	0.0000532 mg/l	<0.01
Marine sediment	0.000223 mg/kg	<0.01
STP: Sewage Treatment Plant	0 mg/l	<0.01
Soil	0.00289 mg/kg	<0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic	2.22 mg/kg/day
Worker - inhalative, long-term - systemic	50.1 mg/m ³

Calculation method Used ECETOC TRA model

Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	15.01 mg/m ³	0.3
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.034 mg/kg/day	0.016
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.315
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	25.03 mg/m ³	0.5
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.034 mg/kg/day	0.016
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.515
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	10.01 mg/m ³	0.2
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309

PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.509
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	5.006 mg/m ³	0.1
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - combined, long-term - systemic		0.409
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	15.01 mg/m ³	0.3
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC13 - Treatment of articles by dipping and pouring	Worker - combined, long-term - systemic		0.609
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	10.01 mg/m ³	0.2
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.509

Section 4 - Guidance to check compliance with the exposure scenario

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.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name 2-(2-METHOXYETHOXY) ETHANOL
Pure substance/mixture Substance
REACH registration number 01-2119475100-52-XXXX
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Use in coatings (Industrial)
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Process category(ies) PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
 PROC13 - Treatment of articles by dipping and pouring
 PROC28 - Manual maintenance (cleaning and repair) of machinery
Product category(ies) PC9a - Coatings and paints, thinners, paint removers PC9b - Fillers, putties, plasters, modelling clay
Product Name 2-(2-METHOXYETHOXY) ETHANOL
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Covers concentrations up to 100%
Amounts used

Type	Daily amount per site
Value	3300
Units	kg/d

Type	Annual amount per site
Value	66
Units	t(ons)/year

Product characteristics

Physical form of product	Liquid
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Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Sludge treatment	No application of sewage sludge to soil

Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Onsite wastewater treatment required
Additional good practice advice beyond the REACH Chemical Safety Report	Bund storage facilities to prevent soil and water pollution in the event of spillage Site should have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases A leak prevention plan is needed to prevent low level continual releases

Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations Dispose of waste or used sacks/containers according to local regulations
Waste treatment methods	`
Efficiency of at least	99.98%

Control of worker exposure

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Material transfers
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Material transfers
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC10 - Roller application or brushing
Title	Roller, spreader, flow application
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).

Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Handle substance within a predominantly closed system provided with extract ventilation Local exhaust ventilation - efficiency of at least 90%
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Title	Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Provide a good standard of controlled ventilation (5 to 10 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Equipment cleaning and maintenance
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Drain down and flush system prior to equipment break-in or maintenance
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Predicted No Effect Concentration (PNEC)

Freshwater	12 mg/l
Freshwater sediment	44.4 mg/kg
Marine water	1.2 mg/l
Marine sediment	0.44 mg/kg

Soil 2.1 mg/kg
Impact on Sewage Treatment 10000 mg/l

Calculation method	Used EUSES model	
Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.418 mg/l	0.035
Freshwater sediment	1.754 mg/kg	0.04
Marine water	0.042 mg/l	0.035
Marine sediment	0.175 mg/kg	0.399
STP: Sewage Treatment Plant	4.175 mg/l	<0.01
Soil	0.0011 mg/kg	<0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic 2.22 mg/kg/day
Worker - inhalative, long-term - systemic 50.1 mg/m³

Calculation method	Used ECETOC TRA model		
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	10.01 mg/m ³	0.2
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.509
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	5.006 mg/m ³	0.1
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - combined, long-term - systemic		0.409
PROC10 - Roller application or brushing	Worker - inhalative, long-term - systemic	3.504 mg/m ³	0.07
PROC10 - Roller application or brushing	Worker - dermal, long-term - systemic	1.372 mg/kg/day	0.618
PROC10 - Roller application or brushing	Worker - combined, long-term - systemic		0.608
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	15.01 mg/m ³	0.3
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC13 - Treatment of articles by dipping and pouring	Worker - combined, long-term - systemic		0.609

PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	10.01 mg/m ³	0.2
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC28 - Manual maintenance (cleaning and repair) of machinery PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.509

Section 4 - Guidance to check compliance with the exposure scenario

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.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

Product Name 2-(2-METHOXYETHOXY) ETHANOL
Pure substance/mixture Substance
REACH registration number 01-2119475100-52-XXXX
Supplier Univar Solutions UK Ltd
 Aquarius House
 6 Mid Point Business Park
 Bradford
 GBR

Non-Emergency Telephone Number +44 1274 267300 / +44 1274 267306

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Section 1 - Title

Title Paint remover (Industrial use)
Type Worker
Main user group Industrial uses: Uses of substances as such or in preparations at industrial sites
Environmental release category(ies) ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles
Process category(ies) PROC1 - Use in closed process, no likelihood of exposure
 PROC3 - Use in closed batch process (synthesis or formulation)
 PROC13 - Treatment of articles by dipping and pouring
Product category(ies) PC9a - Coatings and paints, thinners, paint removers
Product Name 2-(2-METHOXYETHOXY) ETHANOL
Sector(s) of use SU3 - Industrial uses: Uses of substances as such or in preparations at industrial sites

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Covers concentrations up to 100%
Amounts used

Type	Daily amount per site
Value	2500
Units	kg/d

Type	Annual amount per site
Value	50
Units	t(ons)/year

Product characteristics

Physical form of product	Liquid
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Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Sludge treatment	No application of sewage sludge to soil

Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Technical onsite conditions and measures to reduce or limit discharges, air emissions	Onsite wastewater treatment required
Additional good practice advice beyond the REACH Chemical Safety Report	Bund storage facilities to prevent soil and water pollution in the event of spillage Site should have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases A leak prevention plan is needed to prevent low level continual releases

Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations Dispose of waste or used sacks/containers according to local regulations
Waste treatment methods	-
Efficiency of at least	99.98%

Control of worker exposure

Process category(ies)	PROC1 - Use in closed process, no likelihood of exposure
Title	General exposures (closed systems)
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC3 - Use in closed batch process (synthesis or formulation)
Title	Batch process
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Material transfers
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training

health evaluation	
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities
Title	Material transfers
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Process category(ies)	PROC13 - Treatment of articles by dipping and pouring
Title	Treatment of articles by dipping and pouring
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Technical conditions and measures to control dispersion from source towards the worker	Regular inspection and maintenance of equipment and machines Clear spills immediately Supervision in place to check that the RMMs in place are being used correctly and OCs followed Provide a good standard of controlled ventilation (5 to 10 air changes per hour)
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with specific activity training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Indoor
Assumes process temperature up to	20 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC4 - Industrial use of processing aids in processes and products, not becoming part of articles

Predicted No Effect Concentration (PNEC)

Freshwater	12 mg/l
Freshwater sediment	44.4 mg/kg
Marine water	1.2 mg/l
Marine sediment	0.44 mg/kg
Soil	2.1 mg/kg
Impact on Sewage Treatment	10000 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.317 mg/l	0.026
Freshwater sediment	1.33 mg/kg	0.03

Marine water	0.032 mg/l	0.026
Marine sediment	0.133 mg/kg	0.302
STP: Sewage Treatment Plant	3.163 mg/l	<0.01
Soil	0.00877 mg/kg	<0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic

2.22 mg/kg/day

Worker - inhalative, long-term - systemic

50.1 mg/m³

Calculation method	Used ECETOC TRA model		
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC1 - Use in closed process, no likelihood of exposure	Worker - inhalative, long-term - systemic	0.05 mg/m ³	<0.01
PROC1 - Use in closed process, no likelihood of exposure	Worker - dermal, long-term - systemic	0.0017 mg/kg/day	<0.01
PROC1 - Use in closed process, no likelihood of exposure	Worker - combined, long-term - systemic		<0.01
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - inhalative, long-term - systemic	15.01 mg/m ³	0.3
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - dermal, long-term - systemic	0.034 mg/kg/day	0.016
PROC3 - Use in closed batch process (synthesis or formulation)	Worker - combined, long-term - systemic		0.315
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	10.01 mg/m ³	0.2
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.509
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - inhalative, long-term - systemic	5.006 mg/m ³	0.1
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities	Worker - combined, long-term - systemic		0.409
PROC13 - Treatment of articles by dipping and pouring	Worker - inhalative, long-term - systemic	15.01 mg/m ³	0.3
PROC13 - Treatment of articles by dipping and pouring	Worker - dermal, long-term - systemic	0.686 mg/kg/day	0.309
PROC13 - Treatment of articles by dipping and pouring	Worker - combined, long-term - systemic		0.609

Section 4 - Guidance to check compliance with the exposure scenario

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.

Annex to the Safety Data Sheet according to Regulation (EC) No 1907/2006 [REACH]

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E-mail address SDS.EMEA@univarsolutions.com

Section 1 - Title

Title Use in fuel
Type Worker
Main user group Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
Environmental release category(ies) ERC9a - Wide dispersive indoor use of substances in closed systems ERC9b - Wide dispersive outdoor use of substances in closed systems
Process category(ies) PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
 PROC16 - Using material as fuel sources, limited exposure to unburned product to be expected
Product category(ies) PC13 - Fuels
Product Name 2-(2-METHOXYETHOXY) ETHANOL
Sector(s) of use SU22 - Professional uses

Section 2 - Operational conditions and risk management measures

Section 2.1 - Control of environmental exposure

Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems
 - ERC9b - Wide dispersive outdoor use of substances in closed systems

Covers concentrations up to 100%

Product characteristics

Physical form of product	Liquid
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Conditions and measures related to municipal sewage treatment plant

Assumed domestic sewage treatment plant flow	2000 m3/d
Sludge treatment	No application of sewage sludge to soil

Further information

Operational conditions	Indoor use
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Environmental factors not influenced by risk management

Local freshwater dilution factor	10
Local marine water dilution factor	100

Risk management measures

Additional good practice advice beyond	Bund storage facilities to prevent soil and water pollution in the event of spillage Site should
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the REACH Chemical Safety Report	have a spill plan to ensure that adequate safeguards are in place to minimise the impact of episodic releases A leak prevention plan is needed to prevent low level continual releases
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Conditions and measures related to external treatment of waste for disposal

Disposal	External treatment and disposal of waste should comply with applicable local and/or national regulations Dispose of waste or used sacks/containers according to local regulations
Waste treatment methods	
Efficiency of at least	99.98%

Control of worker exposure

Process category(ies)	PROC16 - Using material as fuel sources, limited exposure to unburned product to be expected
Covers concentrations up to	100%
Use frequency	Covers daily exposures up to 8 hours (unless stated differently).
Conditions and measures related to personal protection, hygiene and health evaluation	Wear suitable gloves tested to EN 374
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Outdoor
Assumes process temperature up to	20 C

Process category(ies)	PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities
Title	Drum/batch transfers
Covers concentrations up to	100%
Use frequency	Covers use up to 60 minutes per day
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN 374) in combination with 'basic' employee training
Organisational measures to prevent /limit releases, dispersion and exposure	Assumes a good basic standard of occupational hygiene is implemented
Indoor/Outdoor use	Outdoor
Assumes process temperature up to	20 C

Section 3 - Exposure estimation

Environmental release category(ies) - ERC9a - Wide dispersive indoor use of substances in closed systems - ERC9b - Wide dispersive outdoor use of substances in closed systems

Predicted No Effect Concentration (PNEC)

Freshwater	12 mg/l
Freshwater sediment	44.4 mg/kg
Marine water	1.2 mg/l
Marine sediment	0.44 mg/kg
Soil	2.1 mg/kg
Impact on Sewage Treatment	10000 mg/l

Calculation method Used EUSES model

Environment	predicted exposure level	Risk characterisation ratio (RCR)
Freshwater	0.00054 mg/l	<0.01
Freshwater sediment	0.00226 mg/kg	<0.01
Marine water	0.0000432 mg/l	<0.01

Marine sediment	0.000223 mg/kg	<0.01
STP: Sewage Treatment Plant	0.00000000823 mg/l	<0.01
Soil	0.00138 mg/kg	<0.01

Derived No Effect Level (DNEL):

Worker - dermal, long-term - systemic

2.22 mg/kg/day

Worker - inhalative, long-term - systemic

50.1 mg/m³

Calculation method	Used ECETOC TRA model		
Process category(ies)	Exposure route	predicted exposure level	Risk characterisation ratio (RCR)
PROC16 - Using material as fuel sources, limited exposure to unburned product to be expected	Worker - inhalative, long-term - systemic	3.504 mg/m ³	0.07
PROC16 - Using material as fuel sources, limited exposure to unburned product to be expected	Worker - dermal, long-term - systemic	0.068 mg/kg/day	0.031
PROC16 - Using material as fuel sources, limited exposure to unburned product to be expected	Worker - combined, long-term - systemic		0.101
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - inhalative, long-term - systemic	17.52 mg/m ³	0.35
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - dermal, long-term - systemic	1.371 mg/kg/day	0.618
PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at non dedicated facilities	Worker - combined, long-term - systemic		0.967

Section 4 - Guidance to check compliance with the exposure scenario

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.