



SAFETY DATA SHEET

2,2'-OXYBISETHANOL

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

1.1. Product identifier

Product name	2,2'-OXYBISETHANOL
Product number	2908
Synonyms; trade names	DEG, DIETHYLENE GLYCOL, 2,2-OXYDIETHANOL, DIETHYLENE GLYCOL HIGH PURITY GRADE
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EU index number	603-140-00-6
EC number	203-872-2

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

Identified uses	Deicing Heat Carrier, Industrial Solvent Chemical Intermediate Polymers Paint. Surface coating Cleaning agent. Lubricant. Metallurgical Industry Lab Reagent Sealant. Adhesive. Biocide For further information, see attached Exposure Scenario.
-----------------	--

1.3. Details of the supplier of the safety data sheet

Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com
----------	---

1.4. Emergency telephone number

Emergency telephone	SGS - +32 (0)3 575 55 55 (24h)
Sds No.	2908

SECTION 2: Hazards identification

2,2'-OXYBISETHANOL

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Acute Tox. 4 - H302
Environmental hazards	Not Classified

2.2. Label elements

EC number 203-872-2

Hazard pictograms



Signal word	Warning
Hazard statements	H302 Harmful if swallowed.
Precautionary statements	P264 Wash contaminated skin thoroughly after handling. P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell. P330 Rinse mouth. P501 Dispose of contents/ container in accordance with national regulations.

2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

SECTION 3: Composition/information on ingredients

3.1. Substances

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
EU index number	603-140-00-6
CAS number	111-46-6
EC number	203-872-2
Ingredient notes	Acute Toxicity Estimate (oral): 1000 mg/kg Acute Toxicity Estimate (dermal): 13300 mg/kg Acute Toxicity Estimate (inhalation): > 4.6 mg/l Dust/Mist 6 hours
Composition comments	The data shown are in accordance with the latest EC Directives.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Get medical attention.
Ingestion	Do not induce vomiting. Get medical attention immediately. Rinse mouth thoroughly with water. Give plenty of water to drink. Never give anything by mouth to an unconscious person.
Skin contact	Rinse immediately with plenty of water. Immediately remove contaminated clothing. Wash contaminated clothing before reuse. Get medical attention if any discomfort continues.

2,2'-OXYBISETHANOL

Eye contact Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Rinse with water. Get medical attention if any discomfort continues.

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

Inhalation Vapours may cause headache, fatigue, dizziness and nausea.

Ingestion Harmful if swallowed. Lethal dose to humans 65ml May cause nausea, headache, dizziness and intoxication.

Skin contact Prolonged skin contact may cause redness and irritation.

Eye contact May cause temporary eye irritation.

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

Notes for the doctor If several ounces (60 - 100 ml) of ethylene glycol have been ingested, early administration of ethanol may counter the toxic effects (metabolic acidosis, renal damage). Consider hemodialysis or peritoneal dialysis & thiamine 100 mg plus pyridoxine 50 mg intravenously every 6 hours. If ethanol is used, a therapeutically effective blood concentration in the range of 100 - 150 mg/dl may be achieved by a rapid loading dose followed by a continuous intravenous infusion. Consult standard literature for details of treatment. 4-Methyl pyrazole (Antizol®) is an effective blocker of alcohol dehydrogenase and should be used in the treatment of ethylene glycol (EG), di- or triethylene glycol (DEG, TEG), ethylene glycol butyl ether (EGBE), or methanol intoxication if available. Fomepizole protocol: loading dose 15 mg/kg intravenously, follow by bolus dose of 10 mg/kg every 12 hours; after 48 hours, increase bolus dose to 15 mg/kg every 12 hours. Continue fomepizole until serum methanol, EG, DEG, TEG or EGBE are undetectable. The signs and symptoms of poisoning include anion gap metabolic acidosis, CNS depression, renal tubular injury, and possible late stage cranial nerve involvement. Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress. In severe poisoning, respiratory support with mechanical ventilation and positive end expiratory pressure may be required. Maintain adequate ventilation and oxygenation of the patient. If lavage is performed, suggest endotracheal and/or esophageal control. Danger from lung aspiration must be weighed against toxicity when considering emptying the stomach. If burn is present, treat as any thermal burn, after decontamination. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Specific hazards Carbon monoxide (CO). Carbon dioxide (CO₂). Aldehydes. Alcohols. Ethers.

Hazardous combustion products Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. Contain and collect extinguishing water.

Special protective equipment for firefighters Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.

2,2'-OXYBISETHANOL

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation.

6.2. Environmental precautions

Environmental precautions Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Absorb in vermiculite, dry sand or earth and place into containers. Flush contaminated area with plenty of water. Collect and place in suitable waste disposal containers and seal securely. For waste disposal, see Section 13.

6.4. Reference to other sections

Reference to other sections Wear protective clothing as described in Section 8 of this safety data sheet.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Usage precautions Avoid spilling. Avoid contact with skin and eyes. Provide adequate ventilation.

7.2. Conditions for safe storage, including any incompatibilities

Storage precautions Keep separate from food, feedstuffs, fertilisers and other sensitive material. Store in tightly-closed, original container in a dry, cool and well-ventilated place. Store at temperatures not exceeding < 40°C.

Storage class Chemical storage.

7.3. Specific end use(s)

Specific end use(s) The identified uses for this product are detailed in Section 1.2.

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

Long-term exposure limit (8-hour TWA): WEL 23 ppm 101 mg/m³

WEL = Workplace Exposure Limit.

DNEL

Workers - Dermal; Long term systemic effects: 43 mg/kg/day
 Workers - Inhalation; Long term local effects: 60 mg/m³
 Workers - Inhalation; Long term systemic effects: 44 mg/m³
 Consumer - Dermal; Long term systemic effects: 21 mg/kg/day
 Consumer - Inhalation; Long term local effects: 12 mg/m³
 Consumer - Inhalation; Long term systemic effects: 12 mg/m³

PNEC

- Fresh water; 10 mg/l
 - marine water; 1 mg/l
 - Sediment (Freshwater); 20.9 mg/kg
 - Sediment (Marinewater); 2.09 mg/kg
 - Intermittent release; 10 mg/l
 - Soil; 1.53 mg/kg
 - STP; 199.5 mg/l

8.2. Exposure controls

2,2'-OXYBISETHANOL

Protective equipment



Appropriate engineering controls

Provide adequate general and local exhaust ventilation. Observe any occupational exposure limits for the product or ingredients.

Eye/face protection

The following protection should be worn: Chemical splash goggles. Personal protective equipment for eye and face protection should comply with European Standard EN166.

Hand protection

The most suitable glove should be chosen in consultation with the glove supplier/manufacturer, who can provide information about the breakthrough time of the glove material. The selected gloves should have a breakthrough time of at least 8 hours. Butyl rubber. Neoprene. Nitrile rubber. Polyvinyl alcohol (PVA). Thickness: 0.35 mm To protect hands from chemicals, gloves should comply with European Standard EN374.

Other skin and body protection

Wear suitable protective clothing as protection against splashing or contamination.

Hygiene measures

Use engineering controls to reduce air contamination to permissible exposure level. Wash hands after handling. Wash at the end of each work shift and before eating, smoking and using the toilet. Wash promptly if skin becomes contaminated. Promptly remove any clothing that becomes contaminated.

Respiratory protection

If ventilation is inadequate, suitable respiratory protection must be worn. Wear a respirator fitted with the following cartridge: Combination filter, type A2/P3. EN 136/140/141/145/143/149

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Appearance	Liquid.
Colour	Colourless.
Odour	Odourless.
Odour threshold	No information available.
pH	pH (diluted solution): 7.1 @ 0.5%
Melting point	-6.5°C
Initial boiling point and range	245°C
Flash point	138 - 154°C Closed cup.
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	Lower flammable/explosive limit: 2.0 % Upper flammable/explosive limit: 12.3 %
Other flammability	No information available.
Vapour pressure	000.8 hPa @ 25°C
Vapour density	3.65
Relative density	1.18 @ 20°C

2,2'-OXYBISETHANOL

Bulk density	No information available.
Solubility(ies)	Soluble in water.
Partition coefficient	log Pow: (-1.98) - (-1.47)
Auto-ignition temperature	229 - 372°C
Decomposition Temperature	No information available.
Viscosity	30 mPa s @ 25°C
Explosive properties	No information available.
Explosive under the influence of a flame	No information available.
Oxidising properties	No information available.

9.2. Other information

Other information	Not determined.
Refractive index	No information available.
Particle size	No information available.
Molecular weight	106.12
Volatility	No information available.
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	There are no known reactivity hazards associated with this product.
-------------------	---

10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
------------------	---

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Will not polymerise.
---	----------------------

10.4. Conditions to avoid

Conditions to avoid	Avoid excessive heat for prolonged periods of time.
----------------------------	---

10.5. Incompatible materials

Materials to avoid	Strong alkalis. Strong acids. Strong oxidising agents.
---------------------------	--

10.6. Hazardous decomposition products

Hazardous decomposition products	Oxides of carbon. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Alcohols. Ether. Aldehydes.
---	--

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

2,2'-OXYBISETHANOL

Acute toxicity oral (LD₅₀ mg/kg) 1,000.0

Species Human

Notes (oral LD₅₀) Harmful if swallowed. LD₅₀ 1000 mg/kg, Oral, Human

ATE oral (mg/kg) 1,000.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 13,300.0

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ 13330 mg/kg, Dermal, Rabbit

ATE dermal (mg/kg) 13,300.0

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LC₅₀ > 4.6 mg/l, Inhalation, Rat

Skin corrosion/irritation

Skin corrosion/irritation Not irritating.

Serious eye damage/irritation

Serious eye damage/irritation May cause temporary eye irritation.

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation Not sensitising. Guinea pig Human

Germ cell mutagenicity

Genotoxicity - in vitro Negative.

Genotoxicity - in vivo Negative.

Carcinogenicity

Carcinogenicity No evidence of carcinogenicity in animal studies.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Reproductive toxicity - development Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Not classified as a specific target organ toxicant after a single exposure.

Specific target organ toxicity - repeated exposure

Target organs Kidneys

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

Toxicokinetics

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

2,2'-OXYBISETHANOL

Inhalation	Vapour may irritate respiratory system/lungs. Vapours may cause headache, fatigue, dizziness and nausea.
Ingestion	Harmful if swallowed. Lethal dose to humans 65ml Irritating. Symptoms following overexposure may include the following: Nausea, vomiting. Stomach pain.
Skin contact	Skin irritation should not occur when used as recommended.
Eye contact	May cause temporary eye irritation.
Target organs	Skin Gastro-intestinal tract

SECTION 12: Ecological information

Ecotoxicity	The product is not expected to be hazardous to the environment. However, large or frequent spills may have hazardous effects on the environment.
--------------------	--

12.1. Toxicity

Toxicity	Not considered toxic to fish.
-----------------	-------------------------------

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 75,200 mg/l, Pimephales promelas (Fat-head Minnow) NOEC, 7 day: 15380 mg/l, Pimephales promelas (Fat-head Minnow)
------------------------------	---

Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 48,900 mg/l, Daphnia magna
---	---

Acute toxicity - aquatic plants	EC ₅₀ , 96 hours: 6,500 - 13,000 mg/l, Pseudokirchneriella subcapitata
--	---

Acute toxicity - microorganisms	EC ₂₀ , 30 minutes: > 1995 mg/l, Activated sludge
--	--

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates	NOEC, 21 day: > 15000 mg/l, Daphnia magna
---	---

12.2. Persistence and degradability

Persistence and degradability	The product is readily biodegradable.
--------------------------------------	---------------------------------------

Biodegradation	- Degradation 90 - 100%: 20 day OECD 301A - Degradation 82 - 98%: 28 day OECD 302C
-----------------------	---

12.3. Bioaccumulative potential

Bioaccumulative potential	BCF: 100,
----------------------------------	-----------

Partition coefficient	log Pow: (-1.98) - (-1.47)
------------------------------	----------------------------

12.4. Mobility in soil

Mobility	The product is soluble in water.
-----------------	----------------------------------

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment	This substance is not classified as PBT or vPvB according to current EU criteria.
---	---

12.6. Other adverse effects

2,2'-OXYBISETHANOL

Other adverse effects	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.
------------------------------	---

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information	Waste is classified as hazardous waste. Do not puncture or incinerate, even when empty.
Disposal methods	Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority. Avoid the spillage or runoff entering drains, sewers or watercourses.

SECTION 14: Transport information

General	The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).
----------------	--

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant

No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL and the IBC Code

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Pollution category: Cat Z Ship type: 1

SECTION 15: Regulatory information

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

EU legislation	Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended). Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended). Commission Regulation (EU) No 2015/830 of 28 May 2015.
-----------------------	--

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

2,2'-OXYBISETHANOL

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

Canada - DSL/NDSL

All the ingredients are listed or exempt.
DSL

US - TSCA

All the ingredients are listed or exempt.

Australia - AICS

All the ingredients are listed or exempt.

Japan - ENCS

All the ingredients are listed or exempt.

Korea - KECI

All the ingredients are listed or exempt.

China - IECSC

All the ingredients are listed or exempt.

Philippines – PICCS

All the ingredients are listed or exempt.

New Zealand - NZIOC

All the ingredients are listed or exempt.

SECTION 16: Other information

2,2'-OXYBISETHANOL

Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.
 CAS: Chemical Abstracts Service.
 DNEL: Derived No Effect Level.
 IATA: International Air Transport Association.
 IMDG: International Maritime Dangerous Goods.
 Kow: Octanol-water partition coefficient.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: Lethal Dose to 50% of a test population (Median Lethal Dose).
 PBT: Persistent, Bioaccumulative and Toxic substance.
 PNEC: Predicted No Effect Concentration.
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.
 vPvB: Very Persistent and Very Bioaccumulative.
 IARC: International Agency for Research on Cancer.
 MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.
 cATpE: Converted Acute Toxicity Point Estimate.
 BCF: Bioconcentration Factor.
 BOD: Biochemical Oxygen Demand.
 EC₅₀: 50% of maximal Effective Concentration.
 LOAEC: Lowest Observed Adverse Effect Concentration.
 LOAEL: Lowest Observed Adverse Effect Level.
 NOAEC: No Observed Adverse Effect Concentration.
 NOAEL: No Observed Adverse Effect Level.
 NOEC: No Observed Effect Concentration.
 LOEC: Lowest Observed Effect Concentration.
 DMEL: Derived Minimal Effect Level.
 EL50: Exposure Limit 50
 hPa: Hectopascal
 LL50: Lethal Loading fifty
 OECD: Organisation for Economic Co-operation and Development
 POW: Octanol-water partition coefficient
 SCBA: self-contained breathing apparatus
 STP: Sewage Treatment Plant
 VOC: Volatile Organic Compounds

Classification abbreviations and acronyms

Acute Tox. = Acute toxicity
 Aquatic Acute = Hazardous to the aquatic environment (acute)
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

Key literature references and sources for data

ECHA Disseminated REACH Dossier

Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

Revision date

30/03/2023

Version number

5.002

Supersedes date

21/11/2019

SDS number

2908

2,2'-OXYBISETHANOL

SDS status

Approved.

Hazard statements in full

H302 Harmful if swallowed.

Signature

Jitendra Panchal



Exposure scenario Use as an intermediate

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use as an intermediate
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC6a Use of intermediate
--------------------------------	---------------------------

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC15 Use as laboratory reagent.
------------------	--

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

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

Use as an intermediate

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm².
--------------------------------	--

Other given operational conditions affecting workers exposure

Setting	Indoor.
---------	---------

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	No specific risk management measure identified beyond those operational conditions stated.
-------------------------	--

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
 Use suitable eye protection.
 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 If above technical/organisational control measures are not feasible, then adopt following PPE:
 Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version
-------------------	--

Use as an intermediate

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC5 Mixing or blending in batch processes

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Use as a Process chemical

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use as a Process chemical
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
--------------------------------	--

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC13 Treatment of articles by dipping and pouring. PROC14 Tableting, compression, extrusion, pelletisation, granulation PROC15 Use as laboratory reagent.
------------------	---

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Use as a Process chemical

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC13 Treatment of articles by dipping and pouring. PROC14 Tableting, compression, extrusion, pelletisation, granulation Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm².
--------------------------------	--

Other given operational conditions affecting workers exposure

Setting	Indoor.
---------	---------

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	No specific risk management measure identified beyond those operational conditions stated.
-------------------------	--

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
Use suitable eye protection.
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
If above technical/organisational control measures are not feasible, then adopt following PPE:
Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version
-------------------	--

Use as a Process chemical

Use as a Process chemical

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC5 Mixing or blending in batch processes

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC14 Tableting, compression, extrusion, pelletisation, granulation

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 3.43 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

Use as a Process chemical

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Distribution of substance

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Distribution of substance
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC1 Manufacture of the substance ERC2 Formulation into mixture ERC3 Formulation into solid matrix ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC5 Use at industrial site leading to inclusion into/onto article ERC6a Use of intermediate ERC6b Use of reactive processing aid at industrial site (no inclusion into or onto article) ERC6c Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article) ERC6d Use of reactive process regulators in polymerisation processes at industrial site (inclusion or not into/onto article) ERC7 Use of functional fluid at industrial site
--------------------------------	---

Worker

Distribution of substance

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
	PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
	PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
	PROC4 Chemical production where opportunity for exposure arises
	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
	PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
	PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
	PROC15 Use as laboratory reagent.

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting workers exposure

Setting	Indoor.
---------	---------

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures No specific risk management measure identified beyond those operational conditions stated.

Risk management measures

Distribution of substance

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Use suitable eye protection.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

If above technical/organisational control measures are not feasible, then adopt following PPE:

Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version
--------------------------	--

Distribution of substance

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Formulation & (re)packing of substances and mixtures

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Formulation & (re)packing of substances and mixtures
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC2 Formulation into mixture
--------------------------------	-------------------------------

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC14 Tableting, compression, extrusion, pelletisation, granulation PROC15 Use as laboratory reagent.
------------------	--

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Formulation & (re)packing of substances and mixtures

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC14 Tableting, compression, extrusion, pelletisation, granulation Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm².
--------------------------------	---

Other given operational conditions affecting workers exposure

Setting	Indoor.
---------	---------

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	No specific risk management measure identified beyond those operational conditions stated.
-------------------------	--

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
Use suitable eye protection.
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
If above technical/organisational control measures are not feasible, then adopt following PPE:
Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version
-------------------	--

Formulation & (re)packing of substances and mixtures

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC5 Mixing or blending in batch processes

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC14 Tableting, compression, extrusion, pelletisation, granulation

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 3.43 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

Formulation & (re)packing of substances and mixtures

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario Polymer production

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Polymer production
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC6c Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)
--------------------------------	--

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC6 Calendering operations. PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC15 Use as laboratory reagent.
------------------	---

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Polymer production

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC6 Calendering operations. Both hands. Covers skin contact area up to 960 cm².
--------------------------------	--

Other given operational conditions affecting workers exposure

Setting	Indoor.
---------	---------

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	No specific risk management measure identified beyond those operational conditions stated.
-------------------------	--

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
Use suitable eye protection.
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
If above technical/organisational control measures are not feasible, then adopt following PPE:
Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version
-------------------	--

Polymer production

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC5 Mixing or blending in batch processes

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC6 Calendering operations.

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.3

Worker - dermal, long-term - systemic: Exposure 2.74 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

Polymer production

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Use in Paints, Use in coatings (use in industrial settings)

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Paints, Use in coatings (use in industrial settings)
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
--------------------------------	--

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC7 Industrial spraying PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring. PROC15 Use as laboratory reagent.
------------------	---

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Use in Paints, Use in coatings (use in industrial settings)

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Amounts used

PROC7 Industrial spraying
Moderate application rate (0.3 - 3 l/minute)

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).
PROC7 Industrial spraying
Covers daily exposure up to 6hours

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm². PROC7 Industrial spraying Whole body.
--------------------------------	---

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at ambient temperature (unless stated differently). PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Assumes activities and processes are carried out at a temperature of 200°C.
Room size	PROC7 Industrial spraying Covers use in room size of 1000 m³.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur. PROC7 Industrial spraying Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m). Ensure that spray direction is only horizontal or downward. Ensure that the direction of airflow is clearly away from the worker.
-------------------------------	--

Organisational measures to prevent/limit releases, dispersion and exposure

Use in Paints, Use in coatings (use in industrial settings)

Organisational measures Clean equipment and the work area every day. Ensure control measures are regularly inspected and maintained.

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Use suitable eye protection.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

If above technical/organisational control measures are not feasible, then adopt following PPE:

Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method ECETOC TRA v2.0 Worker; modified version PROC7 Industrial spraying Stoffenmanager v4.0
RISKOFLUX v2.1

Use in Paints, Use in coatings (use in industrial settings)

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC5 Mixing or blending in batch processes

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC7 Industrial spraying

Worker - inhalation, long-term - local and systemic: Exposure 0.84 mg/m³, DNEL 60 mg/m³, RCR 0.01

Worker - dermal, long-term - systemic: Exposure 75 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.70

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC10 Roller application or brushing

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 2.74 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC15 Use as laboratory reagent.

Use in Paints, Use in coatings (use in industrial settings)

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Use in Paints, Use in coatings, Use in Adhesives, Use in Sealants, Use in Foams, Use in plastics

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Paints, Use in coatings, Use in Adhesives, Use in Sealants, Use in Foams, Use in plastics
------------	--

Main sector	SU22 Professional uses
-------------	------------------------

Environment

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8c Widespread use leading to inclusion into/onto article (indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) ERC8f Widespread use leading to inclusion into/onto article (outdoor)
--------------------------------	--

Worker

Use in Paints, Use in coatings, Use in Adhesives, Use in Sealants, Use in Foams, Use in plastics

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10 Roller application or brushing PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring. PROC14 Tableting, compression, extrusion, pelletisation, granulation PROC15 Use as laboratory reagent. PROC19 Manual activities involving hand contact
-------------------------	---

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

PROC11 Non industrial spraying

Covers daily exposure up to 3hours

PROC19 Manual activities involving hand contact

Covers daily exposure up to 15minutes

Human factors not influenced by risk management

Use in Paints, Use in coatings, Use in Adhesives, Use in Sealants, Use in Foams, Use in plastics

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm ² . PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC13 Treatment of articles by dipping and pouring. PROC14 Tableting, compression, extrusion, pelletisation, granulation Palm of both hands. Covers skin contact area up to 480 cm ² . PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC10 Roller application or brushing Both hands. Covers skin contact area up to 960 cm ² . PROC11 Non industrial spraying Whole body. PROC19 Manual activities involving hand contact Both hands and main part of the arms. Covers skin contact area up to 1980 cm ² .
---------------------------------------	--

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PROC11 Non industrial spraying 1000 m ³

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur. PROC11 Non industrial spraying Ensure that spray direction is only horizontal or downward. Ensure that the task is not carried out by more than one worker simultaneously. Provide enhanced general ventilation by mechanical means.
--------------------------------------	---

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Clean equipment and the work area every day. Ensure control measures are regularly inspected and maintained.
--------------------------------	--

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Use suitable eye protection.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

If above technical/organisational control measures are not feasible, then adopt following PPE:

Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version PROC11 Non industrial spraying Stoffenmanager v4.0 RISKOFDERM v2.1
--------------------------	--

Use in Paints, Use in coatings, Use in Adhesives, Use in Sealants, Use in Foams, Use in plastics

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC5 Mixing or blending in batch processes

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC10 Roller application or brushing

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 2.74 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

PROC11 Non industrial spraying

Worker - inhalation, long-term - local and systemic: Exposure 4.14 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 64.7 mg/kg/day, DNEL 106 mg/kg/day, RCR

Use in Paints, Use in coatings, Use in Adhesives, Use in Sealants, Use in Foams, Use in plastics

0.50

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC14 Tableting, compression, extrusion, pelletisation, granulation

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 3.43 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC19 Manual activities involving hand contact

Worker - inhalation, long-term - local and systemic: Exposure 11.05 mg/m³, DNEL 60 mg/m³, RCR 0.18

Worker - dermal, long-term - systemic: Exposure 14.14 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra> <https://www.stoffenmanager.nl/default.aspx>
<http://www.tno.nl> and search for riskofderm.



Exposure scenario

Use in Paints, Use in coatings, Use in Surface treatment products (consumer use)

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Paints, Use in coatings, Use in Surface treatment products (consumer use)
Product category	PC9a Coatings and paints, thinners, paint removers. PC15 Non-metal-surface treatment products. PC18 Ink and toners. PC23 Leather treatment products PC31 Polishes and wax blends. PC34 Textile dyes and impregnating products
Main sector	SU21 Consumer uses

Environment

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8c Widespread use leading to inclusion into/onto article (indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor) ERC8f Widespread use leading to inclusion into/onto article (outdoor)
--------------------------------	--

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

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

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid
----------------	--------

Use in Paints, Use in coatings, Use in Surface treatment products (consumer use)

Vapour pressure 0.008 hPa @ 25°C

Concentration details Covers concentrations up to 10 %. Unless otherwise stated. PC18 Ink and toners. Covers concentrations up to 5 %.

Amounts used

PC9a Coatings and paints, thinners, paint removers.

PC15 Non-metal-surface treatment products.

Amount per use: 1250 g

PC18 Ink and toners.

Refilling

Amount per use: 50 g

Printing process

Amount per use: 16 g

PC31 Polishes and wax blends.

Amount per use: 550 g

Frequency and duration of use

PC9a Coatings and paints, thinners, paint removers.

Water-borne paint

Application duration: 120 minutes

Spraying paint (spray can)

Application duration: 15 minutes

PC18 Ink and toners.

Refilling

Application duration: 0.3 minutes

Printing process

Application duration: 600 minutes

PC31 Polishes and wax blends.

Application duration: 900 minutes

Covers frequency up to 1 days/year, , . Unless otherwise stated. PC9a Coatings and paints, thinners, paint removers. Spraying paint (spray can) Covers frequency up to 2 days/year, , . PC18 Ink and toners. Covers frequency up to 365 days/year, , .

Human factors not influenced by risk management

Potentially exposed body parts PC9a Coatings and paints, thinners, paint removers. Hands and forearms. Covers skin contact area up to 1900 cm². PC18 Ink and toners. Palm of one hand. Covers skin contact area up to 215 cm². PC31 Polishes and wax blends. Palm of both hands. Covers skin contact area up to 430 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Indoor.

Temperature Assumes activities and processes are carried out at a temperature of 25°C.

Room size PC9a Coatings and paints, thinners, paint removers. Water-borne paint Covers use in room size of 20 m³. Spraying paint (spray can) Covers use in room size of 34 m³. PC18 Ink and toners. Covers use in room size of 25 m³. PC31 Polishes and wax blends. Covers use in room size of 58 m³.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Use in Paints, Use in coatings, Use in Surface treatment products (consumer use)

Assessment method	ConsExpo v4.1
Exposure	PC9a Coatings and paints, thinners, paint removers. Water-borne paint Consumer - inhalation, long-term - local and systemic: Exposure 0.09 mg/m³, DNEL 12 mg/m³, RCR 0.008 Consumer - dermal, long-term - systemic: Exposure 5.54 mg/kg/day, DNEL 53 mg/kg/day, RCR 0.10 PC9a Coatings and paints, thinners, paint removers. Spraying paint (spray can) Consumer - inhalation, long-term - local and systemic: Exposure 0.52 mg/m³, DNEL 12 mg/m³, RCR 0.04 Consumer - dermal, long-term - systemic: Exposure 2.31 mg/kg/day, DNEL 53 mg/kg/day, RCR 0.04 PC18 Ink and toners. Consumer - inhalation, long-term - local and systemic: Exposure 2.22 mg/m³, DNEL 12 mg/m³, RCR 0.19 Consumer - dermal, long-term - systemic: Exposure 0.007 mg/kg/day, DNEL 53 mg/kg/day, RCR 0.001 PC31 Polishes and wax blends. Consumer - inhalation, long-term - local and systemic: Exposure 0.05 mg/m³, DNEL 12 mg/m³, RCR 0.004 Consumer - dermal, long-term - systemic: Exposure 8.46 mg/kg/day, DNEL 53 mg/kg/day, RCR 0.16

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp>



Exposure scenario

Use in Cleaning Agents, Industrial applications

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Cleaning Agents, Industrial applications
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
--------------------------------	--

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC7 Industrial spraying PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring.
------------------	---

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

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

Use in Cleaning Agents, Industrial applications

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Amounts used

PROC7 Industrial spraying
Moderate application rate (0.3 - 3 l/minute)

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).
PROC7 Industrial spraying
Covers daily exposure up to 6hours

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm². PROC7 Industrial spraying Whole body.
--------------------------------	---

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PROC7 Industrial spraying Covers use in room size of 1000 m³.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur. PROC7 Industrial spraying Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m). Ensure that spray direction is only horizontal or downward. Ensure that the direction of airflow is clearly away from the worker.
-------------------------------	--

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Clean equipment and the work area every day. Ensure control measures are regularly inspected and maintained.
-------------------------	--

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
Use suitable eye protection.
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
If above technical/organisational control measures are not feasible, then adopt following PPE:
Wear a respirator conforming to EN140 with Type A filter or better.

Use in Cleaning Agents, Industrial applications

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version PROC7 Industrial spraying Stoffenmanager v4.0 RISKOFDERM v2.1
--------------------------	---

Use in Cleaning Agents, Industrial applications

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC7 Industrial spraying

Worker - inhalation, long-term - local and systemic: Exposure 0.84 mg/m³, DNEL 60 mg/m³, RCR 0.01

Worker - dermal, long-term - systemic: Exposure 75 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.70

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC10 Roller application or brushing

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 2.74 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Use in Cleaning Agents, Professional applications

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Cleaning Agents, Professional applications
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
--------------------------------	---

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC10 Roller application or brushing PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring.
------------------	--

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

Use in Cleaning Agents, Professional applications

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Amounts used

PROC11 Non industrial spraying
Moderate application rate (0.3 - 3 l/minute)

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).
PROC11 Non industrial spraying
Covers daily exposure up to 3hours

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm². PROC11 Non industrial spraying Whole body.
--------------------------------	--

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PROC11 Non industrial spraying Covers use in room size of 1000 m³.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur. PROC11 Non industrial spraying Ensure that spray direction is only horizontal or downward. Ensure that the task is not carried out by more than one worker simultaneously. Provide enhanced general ventilation by mechanical means.
-------------------------------	---

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Clean equipment and the work area every day. Ensure control measures are regularly inspected and maintained.
-------------------------	--

Risk management measures

Use in Cleaning Agents, Professional applications

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Use suitable eye protection.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

If above technical/organisational control measures are not feasible, then adopt following PPE:

Wear a respirator conforming to EN140 with Type A filter or better.

PROC11 Non industrial spraying

Wear suitable coveralls to prevent exposure to the skin.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method

ECETOC TRA v2.0 Worker; modified version PROC11 Non industrial spraying
Stoffenmanager v4.0 RISKOFDERM v2.1

Use in Cleaning Agents, Professional applications

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC10 Roller application or brushing

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 2.74 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

PROC11 Non industrial spraying

Worker - inhalation, long-term - local and systemic: Exposure 4.14 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 64.7 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.50

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Use in Cleaning Agents (consumer use)

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Cleaning Agents (consumer use)
Product category	PC35 Washing and cleaning products
Main sector	SU21 Consumer uses

Environment

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
--------------------------------	---

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

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

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Preparation of material for application Covers concentrations up to 20 %. Application Covers concentrations up to 5 %.

Amounts used

Use in Cleaning Agents (consumer use)

Detergent liquids
Amount per use: 500 g
Spray cleaners
Amount per use: 16.2 g
Floor cleaning (liquids)
Amount per use: 550 g

Frequency and duration of use

Detergent liquids
Application duration: 20 minutes
Spray cleaners
Application duration: 10 minutes
Floor cleaning (liquids)
Application duration: 30 minutes

Covers frequency up to 104 days/year, , . Unless otherwise stated. Spray cleaners Covers frequency up to 365 days/year, , .

Human factors not influenced by risk management

Potentially exposed body parts Palm of one hand. Covers skin contact area up to 215 cm². Unless otherwise stated. Spray cleaners Hands and forearms. Covers skin contact area up to 1900 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Indoor.

Temperature Assumes activities and processes are carried out at a temperature of 25°C.

Room size Detergent liquids Floor cleaning (liquids) Covers use in room size of 58 m³. Spray cleaners Covers use in room size of 15 m³.
Detergent liquids Release area: 100000 cm² Spray cleaners Release area: 17100 cm² Floor cleaning (liquids) Release area: 2200000 cm²

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method ConsExpo v4.1

Exposure Detergent liquids
Consumer - inhalation, long-term - local and systemic: Exposure 0.03 mg/m³, DNEL 12 mg/m³, RCR 0.003
Consumer - dermal, long-term - systemic: Exposure 11.73 mg/kg/day, DNEL 53 mg/kg/day, RCR 0.22
Spray cleaners
Consumer - inhalation, long-term - local and systemic: Exposure 0.008 mg/m³, DNEL 12 mg/m³, RCR 0.0007
Consumer - dermal, long-term - systemic: Exposure 0.13 mg/kg/day, DNEL 53 mg/kg/day, RCR 0.0002
Floor cleaning (liquids)
Consumer - inhalation, long-term - local and systemic: Exposure 0.05 mg/m³, DNEL 12 mg/m³, RCR 0.004
Consumer - dermal, long-term - systemic: Exposure 14.6 mg/kg/day, DNEL 53 mg/kg/day, RCR 0.28

Use in Cleaning Agents (consumer use)

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp>



Exposure scenario

Use in Biocidal products (consumer use)

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Biocidal products (consumer use)
Product category	PC8 Biocidal products
Main sector	SU21 Consumer uses

Environment

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
--------------------------------	---

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

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

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 10 %.

Amounts used

Amount per use: 0.02 g

Frequency and duration of use

Use in Biocidal products (consumer use)

Covers daily exposure up to 60minutes

Human factors not influenced by risk management

Potentially exposed body parts Spraying Palm of one hand. Covers skin contact area up to 215 cm². Cleaning Hands and forearms. Covers skin contact area up to 1900 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Indoor.

Temperature Assumes activities and processes are carried out at a temperature of 25°C.

Room size Covers use in room size of 15 m³.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method ConsExpo v4.1

Exposure Consumer - dermal, long-term - systemic: Exposure 0.07 mg/kg/day, DNEL 53 mg/kg/day, RCR 0.001

Consumer - inhalation, long-term - local and systemic Qualitative approach used to conclude safe use. Consumer - oral, long-term - systemic Qualitative approach used to conclude safe use.

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp>



Exposure scenario

Use in Lubricants, Industrial applications

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Lubricants, Industrial applications
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article) ERC7 Use of functional fluid at industrial site
--------------------------------	---

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC7 Industrial spraying PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring. PROC17 Lubrication at high energy conditions in metal working operations PROC18 General greasing/lubrication at high kinetic energy conditions
------------------	---

2. Conditions of use affecting exposure (Industrial - Environment 1)

Use in Lubricants, Industrial applications

Control of environmental exposure

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Amounts used

PROC7 Industrial spraying
Moderate application rate (0.3 - 3 l/minute)

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).
PROC7 Industrial spraying
Covers daily exposure up to 6hours

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC17 Lubrication at high energy conditions in metal working operations PROC18 General greasing/lubrication at high kinetic energy conditions Both hands. Covers skin contact area up to 960 cm². PROC7 Industrial spraying Whole body.
--------------------------------	--

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PROC7 Industrial spraying Covers use in room size of 1000 m³.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur. PROC7 Industrial spraying Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m). Ensure that spray direction is only horizontal or downward. Ensure that the direction of airflow is clearly away from the worker.
-------------------------------	--

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Clean equipment and the work area every day. Ensure control measures are regularly inspected and maintained.
-------------------------	--

Risk management measures

Use in Lubricants, Industrial applications

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Use suitable eye protection.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC17 Lubrication at high energy conditions in metal working operations

PROC18 General greasing/lubrication at high kinetic energy conditions

If above technical/organisational control measures are not feasible, then adopt following PPE:

Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method

ECETOC TRA v2.0 Worker; modified version PROC7 Industrial spraying Stoffenmanager v4.0
RISKOFLDERM v2.1

Use in Lubricants, Industrial applications

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC7 Industrial spraying

Worker - inhalation, long-term - local and systemic: Exposure 0.84 mg/m³, DNEL 60 mg/m³, RCR 0.01

Worker - dermal, long-term - systemic: Exposure 75 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.70

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC10 Roller application or brushing

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 2.74 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

Use in Lubricants, Industrial applications

PROC17 Lubrication at high energy conditions in metal working operations

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 2.74 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

PROC18 General greasing/lubrication at high kinetic energy conditions

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra> <https://www.stoffenmanager.nl/default.aspx>
<http://www.tno.nl> and search for riskofderm.



Exposure scenario

Use in Metal working fluids / rolling oils, Industrial applications

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Metal working fluids / rolling oils, Industrial applications
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
--------------------------------	--

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC7 Industrial spraying PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring. PROC17 Lubrication at high energy conditions in metal working operations
------------------	---

2. Conditions of use affecting exposure (Industrial - Environment 1)

Use in Metal working fluids / rolling oils, Industrial applications

Control of environmental exposure

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Amounts used

PROC7 Industrial spraying
Moderate application rate (0.3 - 3 l/minute)

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).
PROC7 Industrial spraying
Covers daily exposure up to 6hours

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC17 Lubrication at high energy conditions in metal working operations Both hands. Covers skin contact area up to 960 cm². PROC7 Industrial spraying Whole body.
--------------------------------	--

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PROC7 Industrial spraying Covers use in room size of 1000 m³.

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur. PROC7 Industrial spraying Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m). Ensure that spray direction is only horizontal or downward. Ensure that the direction of airflow is clearly away from the worker.
-------------------------------	--

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Clean equipment and the work area every day. Ensure control measures are regularly inspected and maintained.
-------------------------	--

Risk management measures

Use in Metal working fluids / rolling oils, Industrial applications

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Use suitable eye protection.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

PROC17 Lubrication at high energy conditions in metal working operations

If above technical/organisational control measures are not feasible, then adopt following PPE:

Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version PROC7 Industrial spraying Stoffenmanager v4.0 RISKOFDERM v2.1
--------------------------	---

Use in Metal working fluids / rolling oils, Industrial applications

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC5 Mixing or blending in batch processes

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC7 Industrial spraying

Worker - inhalation, long-term - local and systemic: Exposure 0.84 mg/m³, DNEL 60 mg/m³, RCR 0.01

Worker - dermal, long-term - systemic: Exposure 75 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.70

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC10 Roller application or brushing

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 2.74 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

Use in Metal working fluids / rolling oils, Industrial applications

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC17 Lubrication at high energy conditions in metal working operations

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 2.74 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra> <https://www.stoffenmanager.nl/default.aspx>
<http://www.tno.nl> and search for riskofderm.



Exposure scenario

Use in Metal working fluids / rolling oils, Professional applications

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Metal working fluids / rolling oils, Professional applications
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor) ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
--------------------------------	---

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC5 Mixing or blending in batch processes PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10 Roller application or brushing PROC11 Non industrial spraying PROC13 Treatment of articles by dipping and pouring. PROC17 Lubrication at high energy conditions in metal working operations
------------------	---

Use in Metal working fluids / rolling oils, Professional applications

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).
PROC11 Non industrial spraying
Covers daily exposure up to 3hours

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC10 Roller application or brushing Both hands. Covers skin contact area up to 960 cm². PROC11 Non industrial spraying Whole body. PROC17 Lubrication at high energy conditions in metal working operations
--------------------------------	---

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PROC11 Non industrial spraying 1000 m³

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur. PROC11 Non industrial spraying Ensure that spray direction is only horizontal or downward. Ensure that the task is not carried out by more than one worker simultaneously. Provide enhanced general ventilation by mechanical means.
-------------------------------	---

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Clean equipment and the work area every day. Ensure control measures are regularly inspected and maintained.
-------------------------	--

Risk management measures

Use in Metal working fluids / rolling oils, Professional applications

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.

Use suitable eye protection.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

If above technical/organisational control measures are not feasible, then adopt following PPE:

Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version PROC11 Non industrial spraying Stoffenmanager v4.0 RISKOFDERM v2.1
--------------------------	--

Use in Metal working fluids / rolling oils, Professional applications

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC5 Mixing or blending in batch processes

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC10 Roller application or brushing

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 2.74 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

PROC11 Non industrial spraying

Worker - inhalation, long-term - local and systemic: Exposure 4.14 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 64.7 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.50

Use in Metal working fluids / rolling oils, Professional applications

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC14 Tableting, compression, extrusion, pelletisation, granulation

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 3.43 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC19 Manual activities involving hand contact

Worker - inhalation, long-term - local and systemic: Exposure 11.05 mg/m³, DNEL 60 mg/m³, RCR 0.18

Worker - dermal, long-term - systemic: Exposure 14.14 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra> <https://www.stoffenmanager.nl/default.aspx>
<http://www.tno.nl> and search for riskofderm.



Exposure scenario

Use in Functional Fluids, Industrial applications

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Functional Fluids, Industrial applications
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC7 Use of functional fluid at industrial site
--------------------------------	---

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)
------------------	--

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

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

2. Conditions of use affecting exposure (Workers - Health 1)

Use in Functional Fluids, Industrial applications

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm².
--------------------------------	--

Other given operational conditions affecting workers exposure

Setting	Indoor.
---------	---------

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur. Efficiency of at least 90%

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	No specific risk management measure identified beyond those operational conditions stated.
-------------------------	--

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
 Use suitable eye protection.
 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 If above technical/organisational control measures are not feasible, then adopt following PPE:
 Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version
-------------------	--

Use in Functional Fluids, Industrial applications

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Use in Functional fluids, Professional applications

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Functional fluids, Professional applications
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
--------------------------------	---

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC20 Use of functional fluids in small devices
------------------	--

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

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

2. Conditions of use affecting exposure (Workers - Health 1)

Use in Functional fluids, Professional applications

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC20 Use of functional fluids in small devices Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm².
--------------------------------	--

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at ambient temperature (unless stated differently).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures Provide extract ventilation to points where emissions occur.

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
 Use suitable eye protection.
 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 If above technical/organisational control measures are not feasible, then adopt following PPE:
 Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version
-------------------	--

Use in Functional fluids, Professional applications

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC20 Use of functional fluids in small devices

Worker - inhalation, long-term - local and systemic: Exposure 22.10 mg/m³, DNEL 60 mg/m³, RCR 0.50

Worker - dermal, long-term - systemic: Exposure 1.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Use in Heat transfer fluids, Use in Hydraulic fluids, (consumer use)

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Heat transfer fluids, Use in Hydraulic fluids, (consumer use)
Product category	PC16 Heat transfer fluids. PC17 Hydraulic fluids.
Main sector	SU21 Consumer uses

Environment

Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
--------------------------------	---

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

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

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Control of Non-industrial exposure

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
------------------	--

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 45 %.

Frequency and duration of use

Use in Heat transfer fluids, Use in Hydraulic fluids, (consumer use)

Covers daily exposure up to 15minutes

Human factors not influenced by risk management

Potentially exposed body parts Both hands. Covers skin contact area up to 960 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Indoor.

Temperature Assumes activities and processes are carried out at a temperature of 25°C.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method Used ECETOC TRA model.

Exposure Consumer - inhalation, long-term - local and systemic: Exposure 4.97 mg/m³, DNEL 12 mg/m³, RCR 0.34
Consumer - dermal, long-term - systemic: Exposure 6.17 mg/kg/day, DNEL 53 mg/kg/day, RCR 0.03

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Use in De-icing and Anti-icing agents, De-icing and anti-icing applications, Professional applications

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title Use in De-icing and Anti-icing agents, De-icing and anti-icing applications, Professional applications

Main sector SU22 Professional uses

Environment

Environmental release category ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)

Worker

Process category PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
PROC11 Non industrial spraying

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Use in De-icing and Anti-icing agents, De-icing and anti-icing applications, Professional applications

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm². PROC11 Non industrial spraying Whole body.
--------------------------------	--

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PROC11 Non industrial spraying 1000 m³

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur. PROC11 Non industrial spraying Ensure that spray direction is only horizontal or downward. Ensure that the task is not carried out by more than one worker simultaneously.
-------------------------------	---

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Clean equipment and the work area every day. Ensure control measures are regularly inspected and maintained.
-------------------------	--

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
 Use suitable eye protection.
 PROC11 Non industrial spraying
 Wear suitable coveralls to prevent exposure to the skin.
 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 If above technical/organisational control measures are not feasible, then adopt following PPE:
 Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version PROC11 Non industrial spraying Stoffenmanager v4.0 RISKOFDERM v2.1
-------------------	--

Use in De-icing and Anti-icing agents, De-icing and anti-icing applications, Professional applications

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC11 Non industrial spraying

Worker - inhalation, long-term - local and systemic: Exposure 4.14 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 64.7 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.50

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra> <https://www.stoffenmanager.nl/default.aspx>
<http://www.tno.nl> and search for riskofderm.



Exposure scenario

Use in De-icing and Anti-icing agents, De-icing and anti-icing applications, (consumer use)

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in De-icing and Anti-icing agents, De-icing and anti-icing applications, (consumer use)
Product category	PC4 Anti-freeze and de-icing products.
Main sector	SU21 Consumer uses

Environment

Environmental release category	ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
--------------------------------	--

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

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

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Control of Non-industrial exposure

Process category	PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
------------------	--

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	PC4_1 Washing car window Covers concentrations up to 100 %. PC4_2 Pouring into radiator Covers concentrations up to 45 %.

Amounts used

Use in De-icing and Anti-icing agents, De-icing and anti-icing applications, (consumer use)

PC4_1 Washing car window
Amount per use: 28.5 g

Frequency and duration of use

PC4_1 Washing car window
Covers daily exposure up to 4hours
PC4_1 Washing car window
Spraying
Application duration: 0.7 minutes
PC4_2 Pouring into radiator
Covers daily exposure up to 15minutes

Human factors not influenced by risk management

Potentially exposed body parts PC4_1 Washing car window Spraying Hands and forearms. Covers skin contact area up to 1900 cm². PC4_1 Washing car window Cleaning Both hands. Covers skin contact area up to 960 cm². PC4_2 Pouring into radiator Palm of one hand. Covers skin contact area up to 215 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Indoor.
Temperature Assumes activities and processes are carried out at a temperature of 25°C.
Room size 58 m³

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method Used ECETOC TRA model.
Exposure PC4_1 Washing car window
Consumer - dermal, long-term - systemic: Exposure 4.96 mg/kg/day, DNEL 53 mg/m³, mg/kg/day, RCR 0.00009
PC4_2 Pouring into radiator
Consumer - dermal, long-term - systemic: Exposure 6.17 mg/kg/day, DNEL 53 mg/kg/day, RCR 0.03
Consumer - inhalation, long-term - local and systemic: Exposure 4.97 mg/m³, DNEL 12 mg/m³, RCR 0.34

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.rivm.nl/en/healthandddisease/productsafety/ConsExpo.jsp>



Exposure scenario Use in laboratories

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in laboratories
Main sector	SU3 Industrial uses SU22 Professional uses

Environment

Environmental release category	ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
--------------------------------	---

Worker

Process category	PROC15 Use as laboratory reagent.
------------------	-----------------------------------

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).

Use in laboratories

Human factors not influenced by risk management

Potentially exposed body parts Palm of one hand. Covers skin contact area up to 240 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures No specific risk management measure identified beyond those operational conditions stated.

Risk management measures

Use suitable eye protection and gloves.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method ECETOC TRA v2.0 Worker; modified version

Exposure Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37
Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario

Use in Water treatment chemicals, (use in industrial settings)

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Water treatment chemicals, (use in industrial settings)
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC3 Formulation into solid matrix ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
--------------------------------	--

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC13 Treatment of articles by dipping and pouring.
------------------	---

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Use in Water treatment chemicals, (use in industrial settings)

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers frequency up to 4 hour/day, 240 days/year, .

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm².
---------------------------------------	---

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at ambient temperature (unless stated differently).

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
Use suitable eye protection.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version
--------------------------	--

Use in Water treatment chemicals, (use in industrial settings)

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.221

Worker - dermal, long-term - systemic: Exposure 0.343 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 13.7 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.07

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>



Exposure scenario
Use in Adhesives, Use in Sealants, (consumer use)

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Adhesives, Use in Sealants, (consumer use)
Product category	PC1 Adhesives, sealants.
Main sector	SU21 Consumer uses

Environment

Environmental release category	ERC8c Widespread use leading to inclusion into/onto article (indoor)
--------------------------------	--

2. Conditions of use affecting exposure (Non-industrial - Environment 1)**Control of environmental exposure (Non-industrial)**

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

2. Conditions of use affecting exposure (Non-industrial - Health 1)**Product characteristics**

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Concentration of substance in product: 0.75%

Amounts used

Amount per use: 9000 g

Frequency and duration of use

Covers daily exposure up to 75minutes

Use in Adhesives, Use in Sealants, (consumer use)

Human factors not influenced by risk management

Potentially exposed body parts Hand application - fingerpaints, pastels, adhesives Covers skin contact area up to 110 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Indoor.

Temperature Assumes activities and processes are carried out at a temperature of 25°C.

Room size 58 m³

Release area: 40000 cm² Release duration: 4500 seconds

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method ConsExpo v4.1

Exposure Consumer - inhalation, long-term - local and systemic: Exposure 0.31 mg/m³, DNEL 12 mg/m³, RCR 0.34
Consumer - dermal, long-term - systemic: Exposure 0.26 mg/kg/day, DNEL 53 mg/kg/day, RCR 0.003

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp>



Exposure scenario

Polymer production, Use in Adhesives, Use in Sealants, Use in Foams, Use in coatings

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Polymer production, Use in Adhesives, Use in Sealants, Use in Foams, Use in coatings
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC2 Formulation into mixture ERC3 Formulation into solid matrix ERC5 Use at industrial site leading to inclusion into/onto article ERC6c Use of monomer in polymerisation processes at industrial site (inclusion or not into/onto article)
--------------------------------	---

Worker

Polymer production, Use in Adhesives, Use in Sealants, Use in Foams, Use in coatings

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC7 Industrial spraying PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC10 Roller application or brushing PROC13 Treatment of articles by dipping and pouring. PROC14 Tableting, compression, extrusion, pelletisation, granulation PROC15 Use as laboratory reagent.
-------------------------	---

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Amounts used

PROC7 Industrial spraying
Moderate application rate (0.3 - 3 l/minute)

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).
PROC7 Industrial spraying
Covers daily exposure up to 6hours

Human factors not influenced by risk management

Polymer production, Use in Adhesives, Use in Sealants, Use in Foams, Use in coatings

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC15 Use as laboratory reagent. Palm of one hand. Covers skin contact area up to 240 cm ² . PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC5 Mixing or blending in batch processes PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing) PROC13 Treatment of articles by dipping and pouring. PROC14 Tableting, compression, extrusion, pelletisation, granulation Palm of both hands. Covers skin contact area up to 480 cm ² . PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm ² . PROC7 Industrial spraying Whole body.
---------------------------------------	---

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at ambient temperature (unless stated differently).
Room size	PROC7 Industrial spraying Covers use in room size of 1000 m ³ .

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Provide extract ventilation to points where emissions occur. PROC7 Industrial spraying Ensure that the task is being carried out outside the breathing zone of a worker (distance head-product greater than 1m). Ensure that spray direction is only horizontal or downward. Ensure that the direction of airflow is clearly away from the worker.
--------------------------------------	--

Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Clean equipment and the work area every day. Ensure control measures are regularly inspected and maintained.
--------------------------------	--

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
 Use suitable eye protection.
 PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
 If above technical/organisational control measures are not feasible, then adopt following PPE:
 Wear a respirator conforming to EN140 with Type A filter or better.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version PROC7 Industrial spraying Stoffenmanager v4.0 RISKOFDERM v2.1
--------------------------	--

Polymer production, Use in Adhesives, Use in Sealants, Use in Foams, Use in coatings

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.22

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.003

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC5 Mixing or blending in batch processes

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC7 Industrial spraying

Worker - inhalation, long-term - local and systemic: Exposure 0.84 mg/m³, DNEL 60 mg/m³, RCR 0.01

Worker - dermal, long-term - systemic: Exposure 75 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.70

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 4.42 mg/m³, DNEL 60 mg/m³, RCR 0.07

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing)

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC10 Roller application or brushing

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 2.74 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

Polymer production, Use in Adhesives, Use in Sealants, Use in Foams, Use in coatings

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC14 Tableting, compression, extrusion, pelletisation, granulation

PROC15 Use as laboratory reagent.

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 3.43 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.03

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra> <https://www.stoffenmanager.nl/default.aspx>
<http://www.tno.nl> and search for riskofderm.



Exposure scenario

Production of rigid foam, (consumer use)

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Production of rigid foam, (consumer use)
Product category	PC32 Polymer preparations and compounds.
Main sector	SU21 Consumer uses

Environment

Environmental release category	ERC8c Widespread use leading to inclusion into/onto article (indoor) ERC8f Widespread use leading to inclusion into/onto article (outdoor)
--------------------------------	---

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Control of environmental exposure (Non-industrial)

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

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Product characteristics

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 5 %.

Amounts used

Amount per use: 825 g

Frequency and duration of use

Application duration: 30 minutes

Production of rigid foam, (consumer use)

Human factors not influenced by risk management

Potentially exposed body parts Hands and forearms. Covers skin contact area up to 1900 cm².

Other given operational conditions affecting Non-industrial exposure

Setting Indoor.

Temperature Assumes activities and processes are carried out at a temperature of 25°C.

Room size 58 m³

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method ConsExpo v4.1

Exposure Consumer - inhalation, long-term - local and systemic: Exposure 0.07 mg/m³, DNEL 12 mg/m³, RCR 0.006
Consumer - dermal, long-term - systemic: Exposure 0.19 mg/kg/day, DNEL 53 mg/m³, mg/kg/day, RCR 0.004

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp>



Exposure scenario

Use in Water treatment chemicals, (use in professional settings)

Identification

Product name	2,2'-OXYBISETHANOL
REACH registration number	01-2119457857-21-XXXX
CAS number	111-46-6
EC number	203-872-2
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in Water treatment chemicals, (use in professional settings)
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC8f Widespread use leading to inclusion into/onto article (outdoor)
--------------------------------	---

Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4 Chemical production where opportunity for exposure arises PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC13 Treatment of articles by dipping and pouring.
------------------	---

2. Conditions of use affecting exposure (Industrial - Environment 1)

Control of environmental exposure

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

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Use in Water treatment chemicals, (use in professional settings)

Physical state	Liquid
Vapour pressure	0.008 hPa @ 25°C
Concentration details	Covers concentrations up to 100 %.

Frequency and duration of use

Covers frequency up to 4 hour/day, 240 days/year, .

Human factors not influenced by risk management

Potentially exposed body parts	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Palm of one hand. Covers skin contact area up to 240 cm². PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC13 Treatment of articles by dipping and pouring. Palm of both hands. Covers skin contact area up to 480 cm². PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Both hands. Covers skin contact area up to 960 cm².
---------------------------------------	---

Other given operational conditions affecting workers exposure

Setting	Indoor.
Temperature	Assumes activities are at ambient temperature (unless stated differently).

Risk management measures

Wear chemically-resistant gloves (tested to EN374) in combination with 'basic' employee training.
Use suitable eye protection.

3. Exposure estimation (Environment 1)

As no environmental hazard was identified, no environmental-related exposure assessment and risk characterisation was performed. The use is assessed to be safe.

3. Exposure estimation (Health 1)

Assessment method	ECETOC TRA v2.0 Worker; modified version
--------------------------	--

Use in Water treatment chemicals, (use in professional settings)

Exposure

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 0.04 mg/m³, DNEL 60 mg/m³, RCR 0.0007

Worker - dermal, long-term - systemic: Exposure 0.34 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 1.37 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.01

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition

Worker - inhalation, long-term - local and systemic: Exposure 13.27 mg/m³, DNEL 60 mg/m³, RCR 0.221

Worker - dermal, long-term - systemic: Exposure 0.343 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.0032

PROC4 Chemical production where opportunity for exposure arises

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.06

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 22.11 mg/m³, DNEL 60 mg/m³, RCR 0.37

Worker - dermal, long-term - systemic: Exposure 13.7 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 6.86 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.07

PROC13 Treatment of articles by dipping and pouring.

Worker - inhalation, long-term - local and systemic: Exposure 44.22 mg/m³, DNEL 60 mg/m³, RCR 0.74

Worker - dermal, long-term - systemic: Exposure 13.71 mg/kg/day, DNEL 106 mg/kg/day, RCR 0.13

4. Guidance to check compliance with the exposure scenario (Health 1)

For scaling see <http://www.ecetoc.org/tra>