SAFETY DATA SHEET
According to EC No 1907/2006 as amended as at the date of this SDS

Methyl PROXITOL

Version	Revision Date:	SDS Number:	Date of last issue: 22.11.2023
3.1	26.07.2024	800001005738	Print Date 03.08.2024

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

1.1 Product identifier

Trade name	:	Methyl PROXITOL
Product code	:	U5141
Registration number EU	:	01-2119457435-35-0002
CAS-No.	:	107-98-2
Other means of identification	:	1-methoxy-2-propanol, PGME, PM, Propylene glycol monomethyl ether

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

Use of the Substance/Mixture	:	Solvent. Please refer to section 16 and/or the annexes for the registered uses under REACH.
Uses advised against	:	This product must not be used in applications other than those listed in Section 1 without first seeking the advice of the supplier.

1.3 Details of the supplier of the safety data sheet

Manufacturer/Supplier	:	**Shell Chemicals Europe B.V.** PO Box 2334 3000 CH Rotterdam Netherlands
Telephone	:	+31 (0)10 441 5137 / +31 (0)10 441 5191
Telefax	:	+31 (0)20 716 8316 / +31 (0)20 713 9230
Contact for Safety Data Sheet	:	sccmsds@shell.com

1.4 Emergency telephone number

+44 (0) 1235 239 670
National Poison Information Centre (NVIC): Tel. nr. +31(0)88 755 8000 (24 hrs a day and 7 days a week).
Only for the purpose of informing medical personnel.

Other information	:	PROXITOL is a trademark owned by Shell Trademark Management B.V. and Shell Brands Inc. and used by affiliates of Shell plc.

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Flammable liquids, Category 3	H226: Flammable liquid and vapour.
Specific target organ toxicity - single exposure, Category 3, Narcotic effects	H336: May cause drowsiness or dizziness.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :

Signal word : Warning

Hazard statements :

PHYSICAL HAZARDS:
H226 Flammable liquid and vapour.
HEALTH HAZARDS:
H336 May cause drowsiness or dizziness.
ENVIRONMENTAL HAZARDS:
Not classified as environmental hazard according to CLP criteria.

Precautionary statements :

Prevention:

P210 Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P233 Keep container tightly closed.
P243 Take precautionary measures against static discharge.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P370 + P378 In case of fire: Use appropriate media to extinguish.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

Ecological information: 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.

Toxicological information: 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.

Vapours are heavier than air. Vapours may travel across the ground and reach remote ignition sources causing a flashback fire danger.
Even with proper grounding and bonding, this material can still accumulate an electrostatic charge.
If sufficient charge is allowed to accumulate, electrostatic discharge and ignition of flammable air-vapour mixtures can occur.

SECTION 3: Composition/information on ingredients

3.1 Substances

Components

Chemical name	CAS-No. EC-No.	Concentration (% w/w)
1-Methoxypropane-2-ol	107-98-2 203-539-1	>= 99,6
2-methoxypropanol	1589-47-5 216-455-5	< 0,1

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice : Not expected to be a health hazard when used under normal conditions.

Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.

If inhaled : Remove to fresh air. If rapid recovery does not occur, transport to nearest medical facility for additional treatment.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.
If persistent irritation occurs, obtain medical attention.

In case of eye contact : Flush eye with copious quantities of water.
Remove contact lenses, if present and easy to do. Continue

rinsing.
If persistent irritation occurs, obtain medical attention.

If swallowed : If swallowed, do not induce vomiting: transport to nearest medical facility for additional treatment. If vomiting occurs spontaneously, keep head below hips to prevent aspiration. Rinse mouth.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms : Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, light-headedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.
Skin irritation signs and symptoms may include a burning sensation, redness, or swelling.
Eye irritation signs and symptoms may include a burning sensation, redness, swelling, and/or blurred vision.
Ingestion may result in nausea, vomiting and/or diarrhoea.
Defatting dermatitis signs and symptoms may include a burning sensation and/or a dried/cracked appearance.

4.3 Indication of any immediate medical attention and special treatment needed

Treatment : Call a doctor or poison control center for guidance.
Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Alcohol-resistant foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.

Unsuitable extinguishing media : None

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-fighting : The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Carbon monoxide may be evolved if incomplete combustion occurs.

5.3 Advice for firefighters

Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).

Specific extinguishing methods	:	Standard procedure for chemical fires.
Further information	:	Clear fire area of all non-emergency personnel. Keep adjacent containers cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Observe the relevant local and international regulations
Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.
Local authorities should be advised if significant spillages cannot be contained.
The vapour is heavier than air, spreads along the ground and distant ignition is possible.
Vapour may form an explosive mixture with air.
6.1.1 For non emergency personnel:
Avoid contact with skin, eyes and clothing.
Isolate hazard area and deny entry to unnecessary or unprotected personnel.
Stay upwind and keep out of low areas.
6.1.2 For emergency responders:
Avoid contact with skin, eyes and clothing.
Isolate hazard area and deny entry to unnecessary or unprotected personnel.
Stay upwind and keep out of low areas.

6.2 Environmental precautions

Environmental precautions : Shut off leaks, if possible without personal risks. Remove all possible sources of ignition in the surrounding area. Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers. Attempt to disperse the vapour or to direct its flow to a safe location for example by using fog sprays. Take precautionary measures against static discharge. Ensure electrical continuity by bonding and grounding (earthing) all equipment.
Ventilate contaminated area thoroughly.
Monitor area with combustible gas indicator.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : For large liquid spills (> 1 drum), transfer by mechanical means such as vacuum truck to a salvage tank for recovery or safe disposal. Do not flush away residues with water. Retain as contaminated waste. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely

For small liquid spills (< 1 drum), transfer by mechanical means to a labeled, sealable container for product recovery or safe disposal. Allow residues to evaporate or soak up with an appropriate absorbent material and dispose of safely. Remove contaminated soil and dispose of safely.

6.4 Reference to other sections

For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet., For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Technical measures	:	Avoid breathing of or direct contact with material. Only use in well ventilated areas. Wash thoroughly after handling. For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material. Ensure that all local regulations regarding handling and storage facilities are followed.
Advice on safe handling	:	Avoid contact with skin, eyes and clothing. Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Bulk storage tanks should be diked (bunded). Extinguish any naked flames. Do not smoke. Remove ignition sources. Avoid sparks. Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment to reduce the risk. The vapours in the head space of the storage vessel may lie in the flammable/explosive range and hence may be flammable. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires. Do NOT use compressed air for filling, discharging, or handling operations.
Product Transfer	:	Refer to guidance under Handling section.

7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	The vapour is heavier than air. Beware of accumulation in pits and confined spaces. Refer to section 15 for any additional specific legislation covering the packaging and storage of this product.

Packaging material : Suitable material: For containers, or container linings use mild steel, stainless steel.
Unsuitable material: Natural, butyl, neoprene or nitrile rubbers.

Container Advice : Containers, even those that have been emptied, can contain explosive vapours. Do not cut, drill, grind, weld or perform similar operations on or near containers.

7.3 Specific end use(s)

Specific use(s) : Please refer to section 16 and/or the annexes for the registered uses under REACH.

Ensure that all local regulations regarding handling and storage facilities are followed.
See additional references that provide safe handling practices: American Petroleum Institute 2003 (Protection Against Ignitions Arising out of Static, Lightning and Stray Currents) or National Fire Protection Agency 77 (Recommended Practices on Static Electricity).
IEC/TS 60079-32-1: Electrostatic hazards, guidance

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

Components	CAS-No.	Value type (Form of exposure)	Control parameters	Basis
1-Methoxypropane-2-ol	107-98-2	TLV-8hr	100 ppm 375 mg/m3	NL WG
	Further information: Skin notation			
1-Methoxypropane-2-ol		TLV-15 min	150 ppm 563 mg/m3	NL WG
	Further information: Skin notation			

Biological occupational exposure limits

No biological limit allocated.

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

Substance name	End Use	Exposure routes	Potential health effects	Value
1-Methoxypropane-2-ol	Workers	Inhalation	Acute local effects	553,5 mg/m3
1-Methoxypropane-2-ol	Workers	Inhalation	Long-term systemic effects	369 mg/m3
1-Methoxypropane-2-ol	Workers	Dermal	Long-term systemic effects	50,6 mg/kg bw/day
1-Methoxypropane-2-	Consumers	Inhalation	Long-term systemic	43,9 mg/m3

ol			effects	
1-Methoxypropane-2-ol	Consumers	Dermal	Long-term systemic effects	18,1 mg/kg bw/day
1-Methoxypropane-2-ol	Consumers	Oral	Long-term systemic effects	3,3 mg/kg bw/day

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

Substance name	Environmental Compartment	Value
1-Methoxypropane-2-ol	Fresh water	10 mg/l
1-Methoxypropane-2-ol	Fresh water sediment	41,6 mg/kg dry weight (d.w.)
1-Methoxypropane-2-ol	Marine sediment	4,17 mg/kg dry weight (d.w.)
1-Methoxypropane-2-ol	Soil	2,47 mg/kg dry weight (d.w.)
1-Methoxypropane-2-ol	Sewage treatment plant	100 mg/l

8.2 Exposure controls

Engineering measures

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.
The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:
Use sealed systems as far as possible.
Adequate explosion-proof ventilation to control airborne concentrations below the exposure guidelines/limits.
Local exhaust ventilation is recommended.
Firewater monitors and deluge systems are recommended.
Eye washes and showers for emergency use.
Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

General Information:
Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.
Define procedures for safe handling and maintenance of controls.
Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.
Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.
Drain down system prior to equipment break-in or maintenance.
Retain drain downs in sealed storage pending disposal or subsequent recycle.

Personal protective equipment

Read in conjunction with the Exposure Scenario for your specific use contained in the Annex.
The provided information is made in consideration of the PPE directive (Council Directive 89/686/EEC) and the CEN European Committee for Standardisation (CEN) standards.

Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.

Eye protection	:	If material is handled such that it could be splashed into eyes, protective eyewear is recommended. Approved to EU Standard EN166.
Hand protection		
Remarks	:	Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. Longer term protection: butyl-rubber Nitrile rubber gloves. Incidental contact/Splash protection: Nitrile rubber gloves. For continuous contact we recommend gloves with break-through time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material. Glove thickness should be typically greater than 0.35 mm depending on the glove make and model. Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.
Skin and body protection	:	Skin protection is not required under normal conditions of use. For prolonged or repeated exposures use impervious clothing over parts of the body subject to exposure. If repeated and/or prolonged skin exposure to the substance is likely, then wear suitable gloves tested to relevant Standard, and provide employee skin care programmes. Protective clothing approved to EU Standard EN14605. Wear antistatic and flame-retardant clothing, if a local risk assessment deems it so.
Respiratory protection	:	If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation. Check with respiratory protective equipment suppliers.

Where air-filtering respirators are unsuitable (e.g. airborne concentrations are high, risk of oxygen deficiency, confined space) use appropriate positive pressure breathing apparatus.
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.
If air-filtering respirators are suitable for conditions of use:
Select a filter suitable for organic gases and vapours [Type A boiling point > 65°C (149°F)] meeting EN14387.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	:	Liquid.
Colour	:	clear
Odour	:	Ethereal
Odour Threshold	:	Data not available
Melting / freezing point	:	-96 °C
Boiling point/boiling range	:	117 - 125 °C
Flammability		
Flammability (solid, gas)	:	Data not available
Lower explosion limit and upper explosion limit / flammability limit		
Upper explosion limit / upper flammability limit	:	13,1 %(V)
Lower explosion limit / Lower flammability limit	:	1,9 %(V)
Flash point	:	30 °C Method: ASTM D93 (PMCC)
Auto-ignition temperature	:	290 °C
Decomposition temperature		
Decomposition temperature	:	Data not available
pH	:	Data not available
Viscosity		
Viscosity, dynamic	:	Data not available

Viscosity, kinematic	:	Data not available
Solubility(ies)		
Water solubility	:	completely soluble (20 °C)
Solubility in other solvents	:	Data not available
Partition coefficient: n-octanol/water	:	log Pow: 0,37
Vapour pressure	:	1,170 Pa (20 °C)
Relative density	:	0,92 (20 °C) Method: ASTM D4052
Density	:	920 - 923 kg/m3 (20 °C) Method: ASTM D4052
Relative vapour density	:	3,1
Particle characteristics		
Particle size	:	Data not available

9.2 Other information

Explosive properties	:	Not applicable
Oxidizing properties	:	Data not available
Evaporation rate	:	0,75 Method: ASTM D 3539, nBuAc=1
Conductivity	:	Electrical conductivity: > 10,000 pS/m A number of factors, for example liquid temperature, presence of contaminants, and anti-static additives can greatly influence the conductivity of a liquid, This material is not expected to be a static accumulator.
Surface tension	:	70,7 mN/m, 20 °C
Molecular weight	:	90,12 g/mol

SECTION 10: Stability and reactivity

10.1 Reactivity

The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

10.2 Chemical stability

No hazardous reaction is expected when handled and stored according to provisions

10.3 Possibility of hazardous reactions

Hazardous reactions : Reacts with strong oxidising agents.

10.4 Conditions to avoid

Conditions to avoid : Avoid heat, sparks, open flames and other ignition sources.
Prevent vapour accumulation.
In certain circumstances product can ignite due to static electricity.

10.5 Incompatible materials

Materials to avoid : Strong oxidising agents.

10.6 Hazardous decomposition products

Thermal decomposition is highly dependent on conditions. A complex mixture of airborne solids, liquids and gases including carbon monoxide, carbon dioxide, sulphur oxides and unidentified organic compounds will be evolved when this material undergoes combustion or thermal or oxidative degradation.

SECTION 11: Toxicological information

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

Information on likely routes of exposure : Exposure may occur via inhalation, ingestion, skin absorption, skin or eye contact, and accidental ingestion.

Acute toxicity

Components:

1-Methoxypropane-2-ol:

Acute oral toxicity : LD50: > 2000 - <= 5000 mg/kg
Remarks: May be harmful if swallowed.

Acute inhalation toxicity : Remarks: Low toxicity by inhalation.

Acute dermal toxicity : LD50: > 5000 mg/kg
Remarks: Low toxicity

Skin corrosion/irritation

Components:

1-Methoxypropane-2-ol:

Remarks : Not irritating to skin.
Prolonged/repeated contact may cause defatting of the skin which can lead to dermatitis.

Serious eye damage/eye irritation

Components:

1-Methoxypropane-2-ol:

Remarks : Slightly irritating to the eye.
Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation

Components:

1-Methoxypropane-2-ol:

Remarks : Not a sensitiser.
Based on available data, the classification criteria are not met.

Germ cell mutagenicity

Components:

1-Methoxypropane-2-ol:

Genotoxicity in vivo : Remarks: No evidence of mutagenic activity.

Germ cell mutagenicity- Assessment : This product does not meet the criteria for classification in categories 1A/1B.

Carcinogenicity

Components:

1-Methoxypropane-2-ol:

Remarks : Not carcinogenic in animal studies.

Carcinogenicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification
1-Methoxypropane-2-ol	No carcinogenicity classification.
2-methoxypropanol	No carcinogenicity classification.

Reproductive toxicity

Components:

1-Methoxypropane-2-ol:

Effects on fertility :

Remarks: Does not impair fertility., Causes foetotoxicity in animals at doses which are maternally toxic., Causes adverse effects on the foetus based on animal studies.

Reproductive toxicity - Assessment : This product does not meet the criteria for classification in categories 1A/1B.

STOT - single exposure

Components:

1-Methoxypropane-2-ol:

Remarks : High concentrations may cause central nervous system depression resulting in headaches, dizziness and nausea; continued inhalation may result in unconsciousness.

STOT - repeated exposure

Components:

1-Methoxypropane-2-ol:

Remarks : Kidney: caused kidney effects in male rats which are not considered relevant to humans
Based on available data, the classification criteria are not met.

Aspiration toxicity

Components:

1-Methoxypropane-2-ol:

Not an aspiration hazard., Based on available data, the classification criteria are not met.

11.2 Information on other hazards

Endocrine disrupting properties

Product:

Assessment : 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.

Further information

Product:

Remarks : Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

Components:

1-Methoxypropane-2-ol:

Remarks : Classifications by other authorities under varying regulatory frameworks may exist.

SECTION 12: Ecological information

12.1 Toxicity

Components:

1-Methoxypropane-2-ol:

Toxicity to fish	:	Remarks: Practically non toxic: LC/EC/IC50 > 1000 mg/l
Toxicity to daphnia and other aquatic invertebrates	:	Remarks: Practically non toxic: LC/EC/IC50 > 1000 mg/l
Toxicity to algae/aquatic plants	:	Remarks: Practically non toxic: LC/EC/IC50 > 1000 mg/l
Toxicity to microorganisms	:	Remarks: Data not available
Toxicity to fish (Chronic toxicity)	:	Remarks: Data not available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity)	:	Remarks: Data not available

12.2 Persistence and degradability

Components:

1-Methoxypropane-2-ol:

Biodegradability : Remarks: Readily biodegradable meeting the 10 day window criterion.
Oxidises rapidly by photo-chemical reactions in air.

12.3 Bioaccumulative potential

Components:

1-Methoxypropane-2-ol:

Bioaccumulation : Remarks: Does not bioaccumulate significantly.

12.4 Mobility in soil

Components:

1-Methoxypropane-2-ol:

Mobility : Remarks: Dissolves in water., If product enters soil, it will be highly mobile and may contaminate groundwater.

12.5 Results of PBT and vPvB assessment

Components:

1-Methoxypropane-2-ol:

Assessment : The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB..

12.6 Endocrine disrupting properties

Product:

Assessment : 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.

12.7 Other adverse effects

Product:

Additional ecological information : Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : Recover or recycle if possible.
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.
Do not dispose into the environment, in drains or in water courses.
Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.
Waste, spills or used product is dangerous waste.

Disposal should be in accordance with applicable regional, national, and local laws and regulations.
Local regulations may be more stringent than regional or national requirements and must be complied with.

MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides technical aspects at controlling pollutions from ships.

Contaminated packaging : Drain container thoroughly.
After draining, vent in a safe place away from sparks and fire.
Residues may cause an explosion hazard.
Do not, puncture, cut, or weld uncleaned drums.
Send to drum recoverer or metal reclaimer.

Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.

Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.

SECTION 14: Transport information

14.1 UN number or ID number

ADN	:	3092
ADR	:	3092
RID	:	3092
IMDG	:	3092
IATA	:	3092

14.2 UN proper shipping name

ADN	:	1-METHOXY-2-PROPANOL
ADR	:	1-METHOXY-2-PROPANOL
RID	:	1-METHOXY-2-PROPANOL
IMDG	:	1-METHOXY-2-PROPANOL
IATA	:	1-METHOXY-2-PROPANOL

14.3 Transport hazard class(es)

ADN	:	3
ADR	:	3
RID	:	3
IMDG	:	3
IATA	:	3

14.4 Packing group

ADN

Packing group	:	III
Classification Code	:	F1

Labels	:	3
CDNI Inland Water Waste Agreement	:	NST 8963 Solvent

ADR

Packing group	:	III
Classification Code	:	F1
Hazard Identification Number	:	30
Labels	:	3

RID

Packing group	:	III
Classification Code	:	F1
Hazard Identification Number	:	30
Labels	:	3

IMDG

Packing group	:	III
Labels	:	3

IATA

Packing group	:	III
Labels	:	3

14.5 Environmental hazards

ADN

Environmentally hazardous : no

ADR

Environmentally hazardous : no

RID

Environmentally hazardous : no

IMDG

Marine pollutant : no

14.6 Special precautions for user

Remarks : Special Precautions: Refer to Section 7, Handling & Storage, for special precautions which a user needs to be aware of or needs to comply with in connection with transport.

14.7 Maritime transport in bulk according to IMO instruments

Pollution category	:	Z
Ship type	:	3
Product name	:	Propylene glycol monoalkyl ether

Additional Information **:** This product may be transported under nitrogen blanketing. Nitrogen is an odourless and invisible gas. Exposure to nitrogen may cause asphyxiation or death. Personnel must observe strict safety precautions when involved with a confined space entry. Transport in bulk according to Annex II of Marpol and the IBC Code

SECTION 15: Regulatory information

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

REACH - List of substances subject to authorisation (Annex XIV)	:	Product is not subject to Authorisation under REACH.
REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59).	:	This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

Other regulations:

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material.

Product is subject to Major accident risk decision 2015 (BRZO+) based on Seveso III directive (2012/18/EU).

The components of this product are reported in the following inventories:

AIIC	:	Listed
DSL	:	Listed
IECSC	:	Listed
ENCS	:	Listed
KECI	:	Listed
NZIoC	:	Listed
PICCS	:	Listed
TSCA	:	Listed
TCSI	:	Listed

15.2 Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of other abbreviations

NL WG	:	Netherlands. Law on Labour conditions - Occupational Exposure Limits

NL WG / TLV-8hr	:	Time Weighted Average
NL WG / TLV-15 min	:	Short Term Exposure Limit

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information

Training advice	:	Provide adequate information, instruction and training for operators.
Other information	:	For Industry guidance and tools on REACH please visit the CEFIC website at http://cefic.org/Industry-support. The substance does not fulfill all screening criteria for persistence, bioaccumulation and toxicity and hence is not considered to be PBT or vPvB. A vertical bar (|) in the left margin indicates an amendment from the previous version.
Sources of key data used to compile the Safety Data Sheet	:	The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU

IUCLID date base, EC 1272 regulation, etc).

Classification of the mixture:		**Classification procedure:**
Flam. Liq. 3	H226	On basis of test data.
STOT SE 3	H336	Expert judgement and weight of evidence determination.

Identified Uses according to the Use Descriptor System

Uses - Worker
Title : Manufacture of substance
- Industrial

Uses - Worker
Title : Use as an intermediate
- Industrial

Uses - Worker
Title : Formulation & (re)packing of substances and mixtures
- Industrial

Uses - Worker
Title : Uses in Coatings
- Industrial
Solvent-based process.

Uses - Worker
Title : Uses in Coatings
- Industrial
Water-based process.

Uses - Worker
Title : Uses in Coatings
- Professional
Solvent-based process.

Uses - Worker
Title : Uses in Coatings
- Professional
Water-based process.

Uses - Worker
Title : Use in Cleaning Agents
- Industrial

Uses - Worker
Title : Use in Cleaning Agents
- Professional

Uses - Worker
Title : Use in Agrochemicals uses
- Professional

Identified Uses according to the Use Descriptor System
Uses - Consumer
Title : Uses in Coatings
- Consumer
Water-based process.

Uses - Consumer
Title : Uses in Coatings
- Consumer
Solvent-based process.

Uses - Consumer
Title : Use in Cleaning Agents
- Consumer

Uses - Consumer
Title : De-icing and anti-icing applications
- Consumer

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

NL / EN

Exposure Scenario - Worker

300000000424	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Manufacture of substance- Industrial
Use Descriptor	**Sector of Use**: SU3, SU8, SU9 **Process Categories**: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 15 **Environmental Release Categories**: ERC1, ERC4
Scope of process	Manufacture of the substance or use as a process chemical or extraction agent. Includes recycling/ recovery, material transfers, storage, maintenance and loading (including marine vessel/barge, road/rail car and bulk container), sampling and associated laboratory activities.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	
Contributing Scenarios	**Risk Management Measures**
General exposures.Continuous process(closed systems)PROC1	No other specific measures identified.
General exposures.Continuous process-with sample collection(closed systems)PROC2	No other specific measures identified.
Use in contained batch processesPROC3	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Process sampling(closed systems)PROC2	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Bulk transfersDedicated	Clear transfer lines prior to de-coupling.

facilityPROC8b	
Bulk product storage(closed systems)PROC2	No other specific measures identified.
Laboratory activi-tiesPROC15	No other specific measures identified.
Section 2.2	**Control of Environmental Exposure**

Substance is a unique structure.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1
Regional use tonnage (tonnes/year):	2,0E+05
Fraction of Regional tonnage used locally:	0,6
Annual site tonnage (tonnes/year):	1,2E+05
Maximum daily site tonnage (kg/day):	4,0E+05
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1,00E-03
Release fraction to wastewater from process (initial release prior to RMM):	3,00E-03
Release fraction to soil from process (initial release prior to RMM):	1,00E-04
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process re-lease estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emis-sions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	87,3
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	5,3E+05

Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
During manufacturing no waste of the substance is generated.	
Conditions and measures related to external recovery of waste	
During manufacturing no waste of the substance is generated.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used EUSES model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Exposure Scenario - Worker

300000000425	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use as an intermediate- Industrial
Use Descriptor	**Sector of Use**: SU3, SU8, SU9 **Process Categories**: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 15 **Environmental Release Categories**: ERC6a
Scope of process	Use of substance as an intermediate (not related to Strictly Controlled Conditions). Includes recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (including marine vessel/barge, road/rail car and bulk container).

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	
Contributing Scenarios	**Risk Management Measures**
General exposures.Continuous process(closed systems)PROC1	No other specific measures identified.
General exposures.Continuous process-with sample collection(closed systems)PROC2	No other specific measures identified.
Use in contained batch processesPROC3	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Process sampling(closed systems)PROC2	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Bulk transfersDedicated	Clear transfer lines prior to de-coupling.

facilityPROC8b	
Bulk product storage(closed systems)PROC2	No other specific measures identified.
Laboratory activi-tiesPROC15	No other specific measures identified.
Section 2.2	**Control of Environmental Exposure**

Substance is a unique structure.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1
Regional use tonnage (tonnes/year):	5,7E+04
Fraction of Regional tonnage used locally:	0,2
Annual site tonnage (tonnes/year):	1,14E+04
Maximum daily site tonnage (kg/day):	3,8E+04
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	1,00E-04
Release fraction to wastewater from process (initial release prior to RMM):	5,00E-04
Release fraction to soil from process (initial release prior to RMM):	1,00E-04
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process re-lease estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emis-sions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	87,3
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	2,9E+06

Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used EUSES model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Exposure Scenario - Worker

300000000427	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Formulation & (re)packing of substances and mixtures- Industrial
Use Descriptor	**Sector of Use**: SU3, SU10 **Process Categories**: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 14, PROC 15 **Environmental Release Categories**: ERC2
Scope of process	Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	
Contributing Scenarios	**Risk Management Measures**
General exposures.Continuous process-no sampling(closed systems)PROC1	No other specific measures identified.
General exposures.Continuous process-with sample collection(closed systems)PROC2	No other specific measures identified.
General exposures.Use in contained batch processeswith sample collectionPROC3	No other specific measures identified.
General exposures (open systems)PROC4	No other specific measures identified.
Batch processes at elevated temperatures(closed	No other specific measures identified.

systems)PROC3	
Process sampling(closed systems)PROC3	No other specific measures identified.
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.
Mixing operations (open systems)PROC5	No other specific measures identified.
Transfer from/pouring from containersManualPROC8a	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.
Production or preparation or articles by tabletting, compression, extrusion or pelletisationPROC14	No other specific measures identified.
Drum and small package fillingDedicated facilityPROC9	No other specific measures identified.
Bulk product storage(closed systems)PROC2	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1
Regional use tonnage (tonnes/year):	6,3E+04
Fraction of Regional tonnage used locally:	0,4
Annual site tonnage (tonnes/year):	3,7E+04
Maximum daily site tonnage (kg/day):	1,3E+05
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	5,00E-03
Release fraction to wastewater from process (initial release prior to RMM):	3,00E-03
Release fraction to soil from process (initial release prior to RMM):	1,00E-04
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
Prevent discharge of undissolved substance to or recover from onsite	

wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	87,3
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	5,3E+05
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used EUSES model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management

measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Exposure Scenario - Worker

300000000428	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Uses in Coatings- IndustrialSolvent-based process.
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13, PROC 15 **Environmental Release Categories**: ERC4
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	
Contributing Scenarios	**Risk Management Measures**
General exposures.(closed systems)PROC1	No other specific measures identified.
General exposures.(closed systems)with sample collectionPROC2	No other specific measures identified.
Film formation - force drying, stoving and other technologies.PROC2	No other specific measures identified.
Mixing operations (closed systems)PROC3	No other specific measures identified.
Film formation - air dryingPROC4	No other specific measures identified.
Preparation of material for applicationMixing operations (open systems)PROC5	No other specific measures identified.

Spraying (automatic/robotic)PROC7	Carry out in a vented booth or extracted enclosure.
SprayingManualPROC7	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Wear suitable gloves tested to EN374.
Material transfersPROC8aPROC8b	No other specific measures identified.
Roller, spreader, flow applicationPROC10	Wear suitable gloves tested to EN374.
Dipping, immersion and pouringPROC13	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1
Regional use tonnage (tonnes/year):	6,3E+04
Fraction of Regional tonnage used locally:	0,05
Annual site tonnage (tonnes/year):	3,2E+03
Maximum daily site tonnage (kg/day):	1,1E+04
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	0,9
Release fraction to wastewater from process (initial release prior to RMM):	0,02
Release fraction to soil from process (initial release prior to RMM):	0,001
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	70
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	87,3
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	

Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	7,9E+04
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used EUSES model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Exposure Scenario - Worker

300000000429	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Uses in Coatings- IndustrialWater-based process.
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13, PROC 15 **Environmental Release Categories**: ERC4
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, spreader, dip, flow, fluidised bed on production lines and film formation) and equipment cleaning, maintenance and associated laboratory activities.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 5%.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	
Contributing Scenarios	**Risk Management Measures**
General exposures.(closed systems)PROC1	No other specific measures identified.
General exposures.(closed systems)with sample collectionPROC2	No other specific measures identified.
Film formation - force drying, stoving and other technologies.PROC2	No other specific measures identified.
Mixing operations (closed systems)General exposures (closed systems)PROC3	No other specific measures identified.
Film formation - air dryingPROC4	No other specific measures identified.
Preparation of material for applicationMixing opera-	No other specific measures identified.

tions (open systems)PROC5	
Spraying (automatic/robotic)PROC7	Wear suitable gloves tested to EN374.
SprayingManualPROC7	Wear suitable gloves tested to EN374.
Material transfersNon-dedicated facilityPROC8a	No other specific measures identified.
Material transfersDedicated facilityPROC8b	No other specific measures identified.
Roller, spreader, flow applicationPROC10	No other specific measures identified.
Dipping, immersion and pouringPROC13	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.
Section 2.2	**Control of Environmental Exposure**

Substance is a unique structure.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1
Regional use tonnage (tonnes/year):	2,6E+03
Fraction of Regional tonnage used locally:	0,05
Annual site tonnage (tonnes/year):	130
Maximum daily site tonnage (kg/day):	433
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	0,8
Release fraction to wastewater from process (initial release prior to RMM):	0,1
Release fraction to soil from process (initial release prior to RMM):	0,001
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	87,3
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0

Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,4E+05
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used EUSES model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Exposure Scenario - Worker

300000000430	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Uses in Coatings- ProfessionalSolvent-based process.
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13, PROC 15, PROC 19 **Environmental Release Categories**: ERC8a, ERC8d
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	
Contributing Scenarios	**Risk Management Measures**
Filling/ preparation of equipment from drums or containers.Use in contained systemsPROC1PROC2	No other specific measures identified.
General exposures.(closed systems)Use in contained systemsPROC2	No other specific measures identified.
Film formation - air dryingPROC4	No specific measures identified.
Preparation of material for applicationPROC3PROC5	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.
Material transfersDrum/batch transfersNon-dedicated facili-	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

tyPROC8a	
Material transfersDedicated facilityDrum/batch transfersPROC8b	No other specific measures identified.
Roller, spreader, flow applicationPROC10	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors. Wear suitable gloves tested to EN374.
SprayingManualIndoorPROC11	Carry out in a vented booth or extracted enclosure. Wear a respirator conforming to EN140 with Type A filter or better.
SprayingManualOutdoorPROC11	Ensure operation is undertaken outdoors. Wear a respirator conforming to EN140 with Type A filter or better. Wear suitable gloves tested to EN374.
Dipping, immersion and pouringPROC13	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors.
Laboratory activitiesPROC15	No other specific measures identified.
Hand application - fingerpaints, pastels, adhesivesPROC19	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1
Regional use tonnage (tonnes/year):	6,3E+04
Fraction of Regional tonnage used locally:	0,05
Annual site tonnage (tonnes/year):	3.150
Maximum daily site tonnage (kg/day):	1,1E+04
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	0,9
Release fraction to wastewater from process (initial release prior to RMM):	0,02

Release fraction to soil from process (initial release prior to RMM):	0,001
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	87,3
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	8,0E+04
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used EUSES model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Exposure Scenario - Worker

300000000431	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Uses in Coatings- ProfessionalWater-based process.
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13, PROC 15 **Environmental Release Categories**: ERC8a, ERC8d
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including materials receipt, storage, preparation and transfer from bulk and semi-bulk, application by spray, roller, brush, spreader by hand or similar methods, and film formation), and equipment cleaning, maintenance and associated laboratory activities.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 5%.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	
Contributing Scenarios	**Risk Management Measures**
Filling/ preparation of equipment from drums or containers.Use in contained systemsPROC2	No other specific measures identified.
General exposures (closed systems)Use in contained systemsPROC1PROC2	No other specific measures identified.
Preparation of material for applicationPROC3PROC5	No specific measures identified.
Film formation - air dryingPROC4	No other specific measures identified.
Material transfersDrum/batch transfersPROC8aPROC8b	No other specific measures identified.
Roller, spreader, flow applicationPROC10	No other specific measures identified.

SprayingManualPROC11	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). , or: Ensure operation is undertaken outdoors. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Dipping, immersion and pouringPROC13	No other specific measures identified.
Laboratory activitiesPROC15	No other specific measures identified.
Hand application - fingerpaints, pastels, adhesivesPROC19	Wear suitable gloves tested to EN374.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1
Regional use tonnage (tonnes/year):	2,6E+03
Fraction of Regional tonnage used locally:	0,05
Annual site tonnage (tonnes/year):	130
Maximum daily site tonnage (kg/day):	433
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	0,8
Release fraction to wastewater from process (initial release prior to RMM):	0,1
Release fraction to soil from process (initial release prior to RMM):	0,001
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by freshwater.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	87,3
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	

Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,5E+04
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used EUSES model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Exposure Scenario - Worker

300000000434	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in Cleaning Agents- Industrial
Use Descriptor	**Sector of Use**: SU3 **Process Categories**: PROC 1, PROC 2, PROC 3, PROC 4, PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13 **Environmental Release Categories**: ERC4, ESVOC SpERC 4.4a.v1
Scope of process	Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. Exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	
Contributing Scenarios	**Risk Management Measures**
Bulk transfersNon-dedicated facilityPROC8a	No specific measures identified.
Use in contained systemsAutomated process with (semi) closed systems.PROC2	No other specific measures identified.
Use in contained systemsAutomated process with (semi) closed systems.Drum/batch transfersPROC3	No other specific measures identified.
Application of cleaning products in closed systemsPROC2	No other specific measures identified.
Filling/ preparation of equipment from drums or	No other specific measures identified.

containers.Dedicated facili-tyPROC8b	
Use in contained batch processesTreatment by heatingPROC4	Provide extraction ventilation at points where emissions oc-cur.
Degreasing small objects in cleaning stationPROC13	No other specific measures identified.
Cleaning with low-pressure washersPROC10	Wear suitable gloves tested to EN374.
Cleaning with high pressure washersPROC7	Avoid carrying out activities involving exposure for more than 4 hours Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
CleaningSurfacesno spray-ingManualPROC10	Wear suitable gloves tested to EN374.
Storage.PROC1	Store substance within a closed system.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1
Regional use tonnage (tonnes/year):	5,2E+03
Fraction of Regional tonnage used locally:	0,02
Annual site tonnage (tonnes/year):	1,04E+02
Maximum daily site tonnage (kg/day):	5,2E+02
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	0,3
Release fraction to wastewater from process (initial release prior to RMM):	1,0E-04
Release fraction to soil from process (initial release prior to RMM):	0
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process re-lease estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emis-sions and releases to soil	
Risk from environmental exposure is driven by marine water.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	87,3

If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	3,1E+06
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used EUSES model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet

(http://cefic.org/en/reach-for-industries-libraries.html).

Exposure Scenario - Worker

300000000435	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in Cleaning Agents- Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC 1, PROC 2, PROC 3, PROC 4, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 13 **Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.4b.v1
Scope of process	Covers the use as a component of cleaning products including pouring/unloading from drums or containers; and exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping automated and by hand).

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers use of substance/product up to 100% (unless stated differently).,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
Filling/ preparation of equipment from drums or containers.Dedicated facilityPROC8b	No specific measures identified.
Use in contained systemsAutomated process with (semi) closed systems.PROC2	No other specific measures identified.
Use in contained systemsAutomated process with (semi) closed systems.Drum/batch transfersPROC3	No other specific measures identified.
Semi Automated process. (e.g.: Semi automatic application of floor care and maintenance products)PROC4	No other specific measures identified.
Filling/ preparation of equipment from drums or containers.Non-dedicated facilityPROC8a	Ensure operation is undertaken outdoors. , or: Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour). Avoid carrying out activities involving exposure for more than 4 hours

CleaningSurfacesManualDipping, immersion and pouringPROC13	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Cleaning with low-pressure washersPROC10	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour).
Cleaning with high pressure washersIndoorPROC11	Limit the substance content in the product to 5 %. Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Wear suitable gloves tested to EN374.
Cleaning with high pressure washersOutdoorPROC11	Limit the substance content in the product to 5 %. Ensure operation is undertaken outdoors. Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
CleaningSurfacesManualSprayingPROC10	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Wear suitable gloves tested to EN374.
Ad hoc manual application via trigger sprays, dipping, etc.Rolling, BrushingPROC10	Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). Wear suitable gloves tested to EN374.
Application of cleaning products in closed systemsPROC4	No other specific measures identified.
Cleaning of medical devicesPROC4	No other specific measures identified.
Storage.PROC1	Store substance within a closed system.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	520
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	0,26
Maximum daily site tonnage (kg/day):	0,712
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	2,00E-02
Release fraction to wastewater from process (initial release prior to RMM):	1,00E-06
Release fraction to soil from process (initial release prior to RMM):	0

Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by marine water.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	87,3
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	550
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.	

Section 3.2 -Environment
Used EUSES model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.	

Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Exposure Scenario - Worker

300000000440	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in Agrochemicals uses- Professional
Use Descriptor	**Sector of Use**: SU22 **Process Categories**: PROC 1, PROC 2, PROC 4, PROC 8a, PROC 8b, PROC 11, PROC 13 **Environmental Release Categories**: ERC8a, ERC8d
Scope of process	Use as an agrochemical excipient for application by manual or machine spraying, smokes and fogging; including equipment clean-downs and disposal.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Section 2.1	**Control of Worker Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure 0.5 - 10 kPa at STP
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25%.,
Frequency and Duration of Use	
Covers daily exposures up to 8 hours (unless stated differently).	
Other Operational Conditions affecting Exposure	
Assumes use at not more than 20°C above ambient temperature (unless stated differently). Assumes a good basic standard of occupational hygiene is implemented.	

Contributing Scenarios	**Risk Management Measures**
Transfer from/pouring from containersDedicated facilityPROC8b	No specific measures identified.
Mixing operations (open systems)OutdoorPROC4	No other specific measures identified.
Spraying/ fogging by manual applicationOutdoorPROC11	Wear suitable gloves tested to EN374. Wear a respirator conforming to EN140 with Type A filter or better.
Spraying/ fogging by machine applicationPROC11	Carry out in a vented booth or extracted enclosure.
Ad hoc manual application via trigger sprays, dipping, etc.PROC13	No other specific measures identified.
Equipment cleaning and maintenancePROC8a	No other specific measures identified.
Disposal of wastesOutdoorPROC8a	No other specific measures identified.
Storage.OutdoorPROC1PROC2	No other specific measures identified.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	1
Regional use tonnage (tonnes/year):	650
Fraction of Regional tonnage used locally:	0,001
Annual site tonnage (tonnes/year):	0,65
Maximum daily site tonnage (kg/day):	325
Frequency and Duration of Use	
Intermittent release.	
Emission Days (days/year):	2
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	0,05
Release fraction to wastewater from process (initial release prior to RMM):	0,1
Release fraction to soil from process (initial release prior to RMM):	0,8
Technical conditions and measures at process level (source) to prevent release	
Common practices vary across sites thus conservative process release estimates used.	
Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil	
Risk from environmental exposure is driven by marine water.	
Prevent discharge of undissolved substance to or recover from onsite wastewater.	
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	
Treat air emission to provide a typical removal efficiency of (%)	0
Treat onsite wastewater (prior to receiving water discharge) to provide the required removal efficiency of >= (%)	87,3
If discharging to domestic sewage treatment plant, no secondary wastewater treatment required.	0
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils. Sludge should be incinerated, contained or reclaimed.	
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional	

regulations.

SECTION 3	EXPOSURE ESTIMATION

Section 3.1 - Health

The ECETOC TRA tool has been used to estimate workplace exposures unless otherwise indicated.

Section 3.2 -Environment

Used EUSES model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.
Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 -Environment

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.

Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.

Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.

Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Exposure Scenario - Consumer

300000001041	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Uses in Coatings - Consumer Water-based process.
Use Descriptor	**Sector of Use**: SU21 **Product Categories**: PC9a **Environmental Release Categories**: ERC8a, ERC8d
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Section 2.1	**Control of Consumer Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure > 10 Pa
Concentration of the Substance in Mixture/Article	Covers concentration up to (%): 5 %
Amounts Used	
for each use event, covers amount up to (g):	1.880
Frequency and Duration of Use	
covers use up to (times/day of use):	1
Exposure (hours/event):	3
Other Operational Conditions affecting Exposure	
Covers use at ambient temperatures.	
Covers use in room size of 20m3	

Product Categories	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Coatings and paints, thinners, paint removers Waterborne latex wall paint. Solvent rich, high solid, water borne paint. Aerosol spray can. Removers (paint-, glue-, wall paper-, sealant-remover).	Avoid using in room with closed doors. Avoid using when windows closed.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	260

Fraction of Regional tonnage used locally:	1,0E-04
Annual site tonnage (tonnes/year):	2,6E-02
Maximum daily site tonnage (kg/day):	8,7E-02
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	300
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	0,8
Release fraction to wastewater from process (initial release prior to RMM):	0,15
Release fraction to soil from process (initial release prior to RMM):	0,01
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Maximum allowable site tonnage (MSafe) based on release following total wastewater treatment removal (kg/d)	1,5E+04
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated. The Consexpo model has been used to estimate consumer exposures unless otherwise indicated.	

Section 3.2 -Environment
Used EUSES model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Exposure Scenario - Consumer

300000001044	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Uses in Coatings - Consumer Solvent-based process.
Use Descriptor	**Sector of Use**: SU21 **Product Categories**: PC9a **Environmental Release Categories**: ERC8a, ERC8d
Scope of process	Covers the use in coatings (paints, inks, adhesives, etc) including exposures during use (including product transfer and preparation, application by brush, spray by hand or similar methods) and equipment cleaning.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**	
Section 2.1	**Control of Consumer Exposure**	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa	
Concentration of the Substance in Mixture/Article	Covers concentration up to (%): 10 %	
Amounts Used		
for each use event, covers amount up to (g):		500
Frequency and Duration of Use		
covers use up to (times/day of use):		1
Exposure (hours/event):		1,1
Other Operational Conditions affecting Exposure		
Covers use in room size of 20m3		
Product Categories	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**	
Coatings and paints, thinners, paint removers Solvent rich, high solid, water borne paint.	Avoid using in room with closed doors.	
	Avoid using when windows closed.	

Section 2.2	**Control of Environmental Exposure**	
Substance is a unique structure.		
Readily biodegradable.		
Amounts Used		
Fraction of EU tonnage used in region:		1
Regional use tonnage (tonnes/year):		6,3E+04
Fraction of Regional tonnage used locally:		0,0001
Annual site tonnage (tonnes/year):		6,3
Maximum daily site tonnage (kg/day):		3,2E+03
Frequency and Duration of Use		

Continuous release.	
Emission Days (days/year):	2
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	0,8
Release fraction to wastewater from process (initial release prior to RMM):	0,15
Release fraction to soil from process (initial release prior to RMM):	0,01
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated. The Consexpo model has been used to estimate consumer exposures unless otherwise indicated.	

Section 3.2 -Environment
Used EUSES model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technolo-

gies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Exposure Scenario - Consumer

300000001043	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	Use in Cleaning Agents - Consumer
Use Descriptor	**Sector of Use**: SU21 **Product Categories**: PC35 **Environmental Release Categories**: ERC8a, ERC8d, ESVOC SpERC 8.4c.v1
Scope of process	Covers general exposures to consumers arising from the use of household products sold as washing and cleaning products, aerosols, coatings, de-icers, lubricants and air care products.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**	
Section 2.1	**Control of Consumer Exposure**	
Product Characteristics		
Physical form of product	Liquid, vapour pressure > 10 Pa	
Concentration of the Substance in Mixture/Article	Covers concentration up to (%): 10 %	
Amounts Used		
for each use event, covers amount up to (g):		16
Frequency and Duration of Use		
Unless stated otherwise.		
Exposure (hours/event):		1
covers use up to (times/day of use):		3
Covers use up to (days/year):		365
Other Operational Conditions affecting Exposure		
Covers use at ambient temperatures. Covers use under typical household ventilation.		

Product Categories	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Washing and cleaning products (including solvent based products) Cleaners, trigger sprays (all purpose cleaners,sanitary products, glass cleaners).	Covers use up to 1 times/day of use
	Covers use in room size of 15 m3
Washing and cleaning products (including solvent based products) Cleaners, liquids (all purpose cleaners, sanitary products, floor cleaners, glass cleaners,	Covers use up to 3 times/day of use

carpet cleaners, metal cleaners).	
	Covers use in room size of 15 m3

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	26
Fraction of Regional tonnage used locally:	5,0E-04
Annual site tonnage (tonnes/year):	0,01
Maximum daily site tonnage (kg/day):	0,027
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	365
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	
Release fraction to air from process (initial release prior to RMM):	0,95
Release fraction to wastewater from process (initial release prior to RMM):	0,025
Release fraction to soil from process (initial release prior to RMM):	0,025
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated. The Consexpo model has been used to estimate consumer exposures unless otherwise indicated.	

Section 3.2 -Environment
Used EUSES model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO

Section 4.1 - Health
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).

Exposure Scenario - Consumer

300000001045	
SECTION 1	**EXPOSURE SCENARIO TITLE**
Title	De-icing and anti-icing applications - Consumer
Use Descriptor	**Sector of Use**: SU21 **Product Categories**: PC4 **Environmental Release Categories**: ERC8d
Scope of process	De-icing of vehicles and similar equipment by spraying.

SECTION 2	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Section 2.1	**Control of Consumer Exposure**
Product Characteristics	
Physical form of product	Liquid, vapour pressure > 10 Pa
Concentration of the Substance in Mixture/Article	Covers concentration up to (%): 30 %
Amounts Used	
for each use event, covers amount up to (g):	500
Frequency and Duration of Use	
Exposure (hours/event):	0,5
covers use up to (times/day of use):	1
Other Operational Conditions affecting Exposure	
Covers outdoor use.	
Product Categories	**OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES**
Anti-Freeze and de-icing products	No specific risk management measure identified beyond those operational conditions stated.

Section 2.2	**Control of Environmental Exposure**
Substance is a unique structure.	
Readily biodegradable.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	260
Fraction of Regional tonnage used locally:	0,002
Annual site tonnage (tonnes/year):	0,52
Maximum daily site tonnage (kg/day):	260
Frequency and Duration of Use	
Continuous release.	
Emission Days (days/year):	2
Environmental factors not influenced by risk management	
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	

Release fraction to air from process (initial release prior to RMM):	0,9
Release fraction to wastewater from process (initial release prior to RMM):	0,05
Release fraction to soil from process (initial release prior to RMM):	0,05
Conditions and Measures related to municipal sewage treatment plant	
Estimated substance removal from wastewater via domestic sewage treatment (%)	87,3
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87,3
Assumed domestic sewage treatment plant flow (m3/d)	2.000
Conditions and Measures related to external treatment of waste for disposal	
External treatment and disposal of waste should comply with applicable local and/or regional regulations.	
Conditions and measures related to external recovery of waste	
External recovery and recycling of waste should comply with applicable local and/or regional regulations.	

SECTION 3	**EXPOSURE ESTIMATION**
Section 3.1 - Health	
The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated. The Consexpo model has been used to estimate consumer exposures unless otherwise indicated.	

Section 3.2 -Environment
Used EUSES model.

SECTION 4	**GUIDANCE TO CHECK COMPLIANCE WITH THE EXPOSURE SCENARIO**
Section 4.1 - Health	
Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.	

Section 4.2 -Environment
Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures.
Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination.
Required removal efficiency for air can be achieved using on-site technologies, either alone or in combination.
Further details on scaling and control technologies are provided in SpERC factsheet (http://cefic.org/en/reach-for-industries-libraries.html).