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

1.1 Product identifier

Trade name : Ethyl Proxitol Acetate

Product code : U5149

Registration number EU : 01-2119475116-39

CAS-No. : 54839-24-6

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

Use of the Sub- : Speciality solvent.

stance/Mixture Please refer to section 16 and/or the annexes for the regis-

tered uses under REACH.

Uses advised against : This product must not be used in applications other than the

above 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 (This telephone number is available 24 hours per day, 7 days per

week)

Giftnotruf (Berlin): +49 (0) 30 3068 6700

Other information : PROXITOL is a trademark owned by Shell Trademark Man-

agement 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 ex-

posure, Category 3, Narcotic effects

H336: May cause drowsiness or dizziness.

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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, hot surfaces, sparks, open

flames and other ignition sources. No smoking. P243 Take action to prevent static discharges.

P280 Wear protective gloves/ protective clothing/ eye protec-

tion/ face protection.

Response:

P304 + P340 IF INHALED: Remove person to fresh air and

keep comfortable for breathing.

P312 Call a POISON CENTER/ doctor if you feel unwell.

Storage:

P402 + P404 Store in a dry place. Store in a closed contain-

er.

P235 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.

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-

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vapour mixtures can occur.

SECTION 3: Composition/information on ingredients

3.1 Substances

Components

Chemical name	CAS-No.	Concentration (% w/w)
	EC-No.	
2-Ethoxy-1-methylethyl	54839-24-6	<= 100
acetate	259-370-9	

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 wa-

ter 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

rinsina.

If persistent irritation occurs, obtain medical attention.

If swallowed : In general no treatment is necessary unless large quantities

are swallowed, however, get medical advice.

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.

No specific hazards under normal use conditions.

Skin irritation signs and symptoms may include a burning sen-

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sation, redness, or swelling.

No specific hazards under normal use conditions.

Eye irritation signs and symptoms may include a burning sen-

sation, redness, swelling, and/or blurred vision.

No specific hazards under normal use conditions.

Ingestion may result in nausea, vomiting and/or diarrhoea.

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 pow-

der, 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 meth-

ods

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

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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 unpro-

tected 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 unpro-

tected 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

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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 stor-

age 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 flamma-

ble.

Properly dispose of any contaminated rags or cleaning mate-

rials in order to prevent fires.

Do NOT use compressed air for filling, discharging, or han-

dling 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.

Storage class (TRGS 510) : 3, Flammable liquids

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 regis-

tered uses under REACH.

Ensure that all local regulations regarding handling and stor-

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age 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	Control parameters	Basis
		of exposure)		
2-Ethoxy-1-	54839-24-6	AGW	20 ppm	DE TRGS
methylethyl ace-			120 mg/m3	900
tate				
	Peak-limit: excursion factor (category): 2;(II)			
Further information: Senate commission for the review of compounds at the work place dangerous for the health (MAK-commission)., Skin absorption, When there is compliance with the OEL and biological tolerance values, there is no risk of harming the unborn child, Limit value for the sum of concentration in air of 1-ethoxypropane-2-ol and 2-ethoxy-1-methylethylacetate.			absorption, e values, there of concentration	

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
2-Ethoxy-1- methylethyl acetate	Workers	Dermal	Long-term systemic effects	103 mg/kg bw/day
2-Ethoxy-1- methylethyl acetate	Workers	Inhalation	Long-term systemic effects	302 mg/kg bw/day
2-Ethoxy-1- methylethyl acetate	Consumer use	Dermal	Long-term systemic effects	62 mg/kg bw/day
2-Ethoxy-1- methylethyl acetate	Consumer use	Inhalation	Long-term systemic effects	181 mg/m3
2-Ethoxy-1- methylethyl acetate	Consumer use	Oral	Long-term systemic effects	13,1 mg/kg bw/day

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

Substance name	Environmental Compartment	Value
2-Ethoxy-1-methylethyl acetate	Fresh water	13 mg/l
2-Ethoxy-1-methylethyl acetate	Marine water	0,13 mg/l
2-Ethoxy-1-methylethyl acetate	Fresh water sediment	6,4 mg/kg
2-Ethoxy-1-methylethyl acetate	Marine sediment	0,64 mg/kg
2-Ethoxy-1-methylethyl acetate	Soil	1,34 mg/kg
2-Ethoxy-1-methylethyl acetate	Sewage treatment plant	62,5 mg/l

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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-

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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

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

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Physical state : Liquid.

Colour : colourless

Odour : characteristic

Odour Threshold : Data not available

Melting / freezing point : -89 °C

Boiling point/boiling range : 158 - 160 °C

Flammability

Flammability (solid, gas) : Data not available

Lower explosion limit and upper explosion limit / flammability limit

Upper explosion limit /

upper flammability limit

: 9,8 %(V)

Lower explosion limit /

Lower flammability limit

: 1 %(V)

Flash point : 53 °C

Auto-ignition temperature : 325 °C

Decomposition temperature

Decomposition tempera-

ture

Data not available

pH : Not applicable

Viscosity

Viscosity, dynamic : Data not available

Viscosity, kinematic : 1,33 mm2/s (40 °C)

Method: ASTM D445

Solubility(ies)

Water solubility : 69,6 g/l (20 °C)

Partition coefficient: n-

octanol/water

: log Pow: 0,76

Vapour pressure : 2,3 hPa (20 °C)

Relative density : Data not available

Density : 0,941 g/cm3 (20 °C)

Method: ASTM D4052

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Relative vapour density : Data not available

Particle characteristics

Particle size : Data not available

9.2 Other information

Explosives : Not applicable

Oxidizing properties : Data not available

Evaporation rate : Data not available

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 : 39,1 mN/m, 20 °C

Molecular weight : 146,2 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 elec-

tricity.

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 or-

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ganic 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 may occur via inhalation, ingestion, skin absorption,

exposure skin or eye contact, and accidental ingestion.

Acute toxicity

Components:

2-Ethoxy-1-methylethyl acetate:

Acute oral toxicity : LD 50 (Rat): > 5000 mg/kg

Remarks: Low toxicity

Acute inhalation toxicity : Remarks: Low toxicity by inhalation.

LC50 greater than near-saturated vapour concentration.

Acute dermal toxicity : LD 50 (Rabbit): > 5000 mg/kg

Remarks: Low toxicity

Skin corrosion/irritation

Components:

2-Ethoxy-1-methylethyl acetate:

Remarks : Not irritating to skin.

Serious eye damage/eye irritation

Components:

2-Ethoxy-1-methylethyl acetate:

Remarks : Not irritating to eye.

Respiratory or skin sensitisation

Components:

2-Ethoxy-1-methylethyl acetate:

Remarks : Not a sensitiser.

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

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Germ cell mutagenicity

Components:

2-Ethoxy-1-methylethyl acetate:

Genotoxicity in vivo : Remarks: Not mutagenic.

Germ cell mutagenicity- As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

Carcinogenicity

Components:

2-Ethoxy-1-methylethyl acetate:

Remarks : Not a carcinogen.

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

Carcinogenicity - Assess-

ment

This product does not meet the criteria for classification in

categories 1A/1B.

Material	GHS/CLP Carcinogenicity Classification
2-Ethoxy-1-methylethyl acetate	No carcinogenicity classification.

Reproductive toxicity

Components:

2-Ethoxy-1-methylethyl acetate:

Effects on fertility :

Remarks: Not a developmental toxicant., Based on available data, the classification criteria are not met., Does not impair

fertility.

Reproductive toxicity - As-

sessment

This product does not meet the criteria for classification in

categories 1A/1B.

STOT - single exposure

Components:

2-Ethoxy-1-methylethyl acetate:

Remarks : May cause drowsiness and dizziness.

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STOT - repeated exposure

Components:

2-Ethoxy-1-methylethyl acetate:

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

Aspiration toxicity

Components:

2-Ethoxy-1-methylethyl acetate:

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 consid-

ered 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 representa-

tive of the product as a whole, rather than for individual com-

ponent(s).

Components:

2-Ethoxy-1-methylethyl acetate:

Remarks : Classifications by other authorities under varying regulatory

frameworks may exist.

SECTION 12: Ecological information

12.1 Toxicity

Components:

2-Ethoxy-1-methylethyl acetate:

Toxicity to fish : Remarks: Practically non toxic:

LC/EC/IC50 > 100 mg/l

Toxicity to daphnia and other :

aquatic invertebrates

Remarks: Practically non toxic: LC/EC/IC50 > 100 mg/l

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Toxicity to algae/aquatic plants : Remarks: Practically non toxic:

LC/EC/IC50 > 100 mg/l

Toxicity to microorganisms

Remarks: LC/EC/IC50 > 100 mg/l

Practically non toxic:

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

Toxicity to fish (Chronic tox-

icity)

Remarks: NOEC/NOEL > 10 - <=100 mg/l

Toxicity to daphnia and other :

aquatic invertebrates (Chron-

ic toxicity)

Remarks: NOEC/NOEL > 100 mg/l

12.2 Persistence and degradability

Components:

2-Ethoxy-1-methylethyl acetate:

Biodegradability : Remarks: Readily biodegradable.

12.3 Bioaccumulative potential

Components:

2-Ethoxy-1-methylethyl acetate:

Bioaccumulation : Remarks: Does not bioaccumulate significantly.

12.4 Mobility in soil

Components:

2-Ethoxy-1-methylethyl acetate:

Mobility : Remarks: If the product enters soil, one or more constituents

will or may be mobile and may contaminate groundwater.,

Dissolves in water.

12.5 Results of PBT and vPvB assessment

Components:

2-Ethoxy-1-methylethyl acetate:

Assessment : The substance does not fulfill all screening criteria for persis-

tence, bioaccumulation and toxicity and hence is not consid-

ered to be PBT or vPvB..

12.6 Endocrine disrupting properties

Product:

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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 infor-

mation

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

Components:

2-Ethoxy-1-methylethyl acetate:

Additional ecological infor-

mation

: None known.

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 meth-

ods 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 na-

tional requirements and must be complied with.

MARPOL - see International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) which provides tech-

nical 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.

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SECTION 14: Transport information

14.1 UN number or ID number

ADN : 3272
ADR : 3272
RID : 3272
IMDG : 3272
IATA : 3272

14.2 UN proper shipping name

ADN : ESTERS, N.O.S.

(2-ethoxy-1-methylethyl acetate)

ADR : ESTERS, N.O.S.

(2-ethoxy-1-methylethyl acetate)

RID : ESTERS, N.O.S.

(2-ethoxy-1-methylethyl acetate)

IMDG : ESTERS, N.O.S.

(2-ethoxy-1-methylethyl acetate)

IATA : ESTERS, N.O.S.

(2-ethoxy-1-methylethyl acetate)

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
Hazard Identification Number : 30
Labels : 3 (F)

CDNI Inland Water Waste : NST 8963 Solvent

Agreement

ADR

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

RID

Packing group : III Classification Code : F1

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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 methyl ether acetate

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 - Candidate List of Substances of Very High

Concern for Authorisation (Article 59).

: This product does not contain substances of very high concern (Regu-

lation (EC) No 1907/2006 (REACH), Article 57).

REACH - List of substances subject to authorisation

Product is not subject to Authorisa-

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(Annex XIV) tion under REACH.

Water hazard class (Germa- : WGK 1 slightly hazardous to water

ny) Remarks: Code Number: 5036, Classification according to

AwSV

Other regulations:

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

Product is subject Betriebs-Sicherheits-Verordnung (BetrSichV).

Compliance with paragraph 22 of Youth Employment Law.

Take note of Law on the protection of mothers at work, in education and in studies (Maternity Protection Act - MuSchG).

Product is subject to Stoerfallverordnung (12. BlmSchV) based on Seveso III directive (2012/18/EU).

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

AIIC : Listed

IECSC : Listed

ENCS : Listed

KECI : Listed

NZIoC : Listed

PICCS : 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

DE TRGS 900 : Germany. TRGS 900 - Occupational exposure limit values.

DE TRGS 900 / AGW : Time Weighted Average

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 -

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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 op-

erators.

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 consid-

ered 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 evi-

dence determination.

Identified Uses according to the Use Descriptor System

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Uses - Worker

Title : Manufacture of substance- Industrial

Uses - Worker

Title : Formulation & (re)packing of substances and mixtures- Indus-

trial

Uses - Worker

Title : Uses in CoatingsSolvent-based process.- Industrial

Uses - Worker

Title : Uses in CoatingsSolvent-based process.- Professional

Identified Uses according to the Use Descriptor System

Uses - Consumer

Title : Uses in Coatings

Solvent-based process.

- 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.

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Exposure Scenario - Worker

Exposure Scenario - Worker	
30000010149	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Manufacture of substance- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC15 Environmental Release Categories: ERC1, ERC4, ESVOC SpERC 1.1.v1
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 kPa at STP	
Concentration of the Sub-	Covers percentage substance in the product up to 100%.,	
stance in Mixture/Article	Unless stated otherwise.,	
Frequency and Duration of	Use	
Covers daily exposures up to	8 hours (unless stated differently).	
Other Operational Condition	ns affecting Exposure	
	an 20°C above ambient temperature (unless stated differently). ard of occupational hygiene is implemented.	
Contributing Scenarios	Risk Management Measures	
General expo-	No other specific measures identified.	
sures.Continuous pro-		
cess(closed sys-		
tems)PROC1		
General expo-	No other specific measures identified.	
sures.Continuous process-		
with sample collec-		
tion(closed sys-		
tems)PROC2	No other enecific managers identified	
Use in contained batch	No other specific measures identified.	
processesPROC3	No other specific measures identified.	
General exposures (open systems)PROC4	ino other specific measures identified.	
Process sampling(closed	No other specific measures identified.	
systems)PROC2	· ·	
Equipment cleaning and maintenancePROC8a	No other specific measures identified.	

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Bulk transfersDedicated facilityPROC8b	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 structu		
Readily biodegradable.		
Very soluble in water (>10g/l)		
Slightly toxic to aquatic specie		
Low bioaccumulation potentia		
Amounts Used	411	1
Fraction of EU tonnage used	in region:	1
Regional use tonnage (tonne		2,0E+03
Fraction of Regional tonnage		1
Annual site tonnage (tonnes/	•	2,0E+03
Maximum daily site tonnage (5,0E+04
Frequency and Duration of		J 0,0L 107
Continuous release.		
Emission Days (days/year):		300
	nfluenced by risk management	300
Local freshwater dilution factor	·	10
		100
Local marine water dilution fa	ns affecting Environmental Exposure	100
		0.004
Release fraction to air from process (initial release prior to RMM):		0,001
Release fraction to wastewater from process (initial release prior to RMM): 0,003		·
Release fraction to soil from process (initial release prior to RMM): 0		_ ~
	neasures at process level (source) to pr	event release
Common practices vary acros lease estimates used.	ss sites thus conservative process re-	
Technical onsite conditions sions and releases to soil	s and measures to reduce or limit disch	arges, air emis-
	lved substance to or recover from onsite	
No air emission controls required; required removal efficiency is 0%.		
Soil emission controls are not applicable as there is no direct release		
to soil.		
Onsite waste water treatment	required.	
Do not discharge to sewers o		
Treat air emission to provide a typical removal efficiency of (%)		0
Treat onsite wastewater (prior to receiving water discharge) to provide		91,5
the required removal efficiency of >= (%)		
		91,5
quired onsite wastewater removal efficiency of (%)		
	prevent/limit release from site	•
Do not apply industrial sludge		
Sludge should be incinerated	, contained or reclaimed.	

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Site should have a spill plan to ensure that adequate safeguards are in place to minimize the impact of episodic releases.

Bund storage facilities to prevent soil and water pollution in the event of spillage.

A leak prevention plan is needed to prevent low level continual releases.

Prevent environmental discharge consistent with regulatory requirements.

Conditions and Measures related to municipal sewage treatment plant		
Estimated substance removal from wastewater via domestic sewage	91,5	
treatment (%)		
Total efficiency of removal from wastewater after onsite and offsite	91,5	
(domestic treatment plant) RMMs (%)		
Maximum allowable site tonnage (MSafe) based on release following	9,8E+04	
total wastewater treatment removal (kg/d)		
Assumed domestic sewage treatment plant flow (m3/d) 4,0E+03		

Conditions and Measures related to external treatment of waste for disposal

Estimated amount entering waste treatment no greater than: 2%.

Type of treatment suitable for waste: incineration.

Removal efficiency (%): 99.98.

Dispose of waste product or used containers according to local regulations.

Treat as hazardous waste.

Conditions and measures related to external recovery of waste

Estimated amount entering waste treatment no greater than: 2%.

Type of treatment suitable for waste: redistillation.

External treatment and disposal 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 ECETOC TRA 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	

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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).

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Exposure Scenario - Worker

Exposure Scenario - Worker	
30000010150	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Formulation & (re)packing of substances and mixtures- Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15 Environmental Release Categories: ERC2, ESVOC SpERC 2.2.v1
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 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
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 measures	Formulate in enclosed or ventilated mixing vessels.
General exposures.Continuous process- no sampling(closed systems)PROC1	No other specific measures identified.
General expo- sures.Continuous process- with sample collec- tion(closed sys- tems)PROC2	No other specific measures identified.
General exposures.Use in contained batch processeswith sample collectionPROC3	No other specific measures identified.
General exposures (open	No other specific measures identified.

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systems)PROC4		
	No other and all an analysis of	
Batch processes at elevat-	No other specific measures identified.	
ed temperatures(closed		
systems)PROC3	No other enecific managers identified	
Process sampling(closed systems)PROC2	No other specific measures identified.	
Bulk transfersDedicated facilityPROC8b	No other specific measures identified.	
Mixing operations (open	No other specific measures identified.	
systems)PROC5	·	
Transfer from/pouring from containersManualPROC9	No other specific measures identified.	
Equipment cleaning and maintenancePROC8a	No other specific measures identified.	
Drum/batch transfersDedicated facilityPROC8b	No other specific measures identified.	
Drum and small package	No other specific measures identified.	
fillingDedicated facili- tyPROC9		
Bulk product storage(closed systems)Product sampling.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 structu		
Readily biodegradable.		
Very soluble in water (>10g/l)		
Slightly toxic to aquatic specie		
Low bioaccumulation potentia		
Amounts Used	11.	
	in region:	1
Fraction of EU tonnage used in region: Regional use tonnage (tonnes/year):		2,0E+03
		1
Fraction of Regional tonnage used locally: Annual site tonnage (tonnes/year):		2,0E+03
Maximum daily site tonnage (1,0E+04
Frequency and Duration of		1,02107
Continuous release.		
		300
Environmental factors not influenced by risk management Local freshwater dilution factor: 10		
Local freshwater dilution factor: Local marine water dilution factor:		100
Other Operational Conditions affecting Environmental Exposure		
Release fraction to air from process (initial release prior to RMM): 0,01		0.01
Release fraction to wastewater from process (initial release prior to RMM): 0,0015 RMM):		
Release fraction to soil from process (initial release prior to RMM): 1,0E-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 disch	arges, air emis-

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sions and releases to soil	T
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no onsite	
wastewater treatment required.	
Treatment of air emissions is not required for the purposes of REACH	
compliance but may be needed to comply with other environmental	
legislation.	
Treat air emission to provide a typical removal efficiency of (%)	
Treat onsite wastewater (prior to receiving water discharge) to provide	91,5
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
Organisational measures to prevent/limit release from site	
Do not apply industrial sludge to natural soils.	
Sludge should be incinerated, contained or reclaimed.	
-	
Bund storage facilities to prevent soil and water pollution in the event of	spillage.
Prevent environmental discharge consistent with regulatory requirement	ts.
Conditions and Measures related to municipal sewage treatment p	lant
Estimated substance removal from wastewater via domestic sewage	91,5
treatment (%)	
Total efficiency of removal from wastewater after onsite and offsite	91,5
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	1,98E+05
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	r disposal
Estimated amount entering waste treatment no greater than: 5%.	
Type of treatment suitable for waste: incineration.	
Pomoval officianay (9/): 00.09	
Removal efficiency (%): 99.98.	
Dispose of waste product or used containers according to local regulation	ons.
Treat as hazardous waste.	
Conditions and maggiros related to external recovery of weets	
Conditions and measures related to external recovery of waste	local and/or regional
External treatment and disposal of waste should comply with applicable	iocai 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.		

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Section 3.2 -Environment
Used ECETOC TRA model.

SECTION 4	GUIDANCE TO CHECK COMPLIANCE WITH THE
	EXPOSURE SCENARIO
Cootion 4.4 Had	146

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).

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Exposure Scenario - Worker

30000010151	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in CoatingsSolvent-based process Industrial
Use Descriptor	Sector of Use: SU3 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15 Environmental Release Categories: ERC4, ESVOC SpERC 4.3a.v1
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 kPa at STP	
Concentration of the Sub-	Covers percentage substance in the product up to 100%.,	
stance in Mixture/Article	Unless stated otherwise.,	
Frequency and Duration of		
	8 hours (unless stated differently).	
Other Operational Conditio	ns affecting Exposure	
	an 20°C above ambient temperature (unless stated differently).	
	ard of occupational hygiene is implemented.	
Contributing Scenarios Risk Management Measures		
General exposures (closed	No other specific measures identified.	
Systems)PROC1	No other enecific managers identified	
General exposures (closed systems) with sample collection PROC2	No other specific measures identified.	
Film formation - force dry-	No other specific measures identified.	
ing (50 - 100°C). Stoving		
(>100°C). UV/EB radiation		
curingPROC2		
Mixing operations (closed	No other specific measures identified.	
systems)General expo-		
sures (closed sys-		
tems)PROC3		
Film formation - air dry-ingPROC4	No other specific measures identified.	

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Preparation of material for applicationMixing opera-	No other specific measures identified.	
tions (open sys-		
tems)PROC5		
Spraying (automat- ic/robotic)PROC7	Carry out in a vented booth or extracted enclosure.	
SprayingManualwith local exhaust ventilation.PROC7	Carry out in a vented booth or extracted enclosure.	
SprayingManualWithout Local Exhaust Ventila- tionPROC7	Wear a respirator conforming to EN140 with Type A filter or better. Change filter cartridge on respirator daily. Avoid carrying out activities involving exposure for more than 4 hours Wear suitable gloves tested to EN374. Wear suitable coveralls to prevent exposure to the skin.	
Material transfersNon- dedicated facilityPROC8a	No other specific measures identified.	
Material transfersDedicated facilityPROC8b	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). Ensure operation is undertaken outdoors.	
Dipping, immersion and pouringPROC13	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).	
Laboratory activi- tiesPROC15	No other specific measures identified.	
Material trans- fersDrum/batch transfer- sTransfer from/pouring from containersDedicated facili- tyPROC9	No other specific measures identified.	
Production or preparation or articles by tabletting, compression, extrusion or pelletisationPROC14	No other specific measures identified.	
Section 2.2	Control of Environmental Exposure	
Substance is a unique structu	ıre.	
Readily biodegradable.		
Very soluble in water (>10g/l).		
Slightly toxic to aquatic species.		
Low bioaccumulation potential.		
Amounts Used		T .
Fraction of EU tonnage used in region:		•
Regional use tonnage (tonnes/year): 1.000		
Fraction of Regional tonnage used locally: 1		·
		200
Maximum daily site tonnage (kg/day): 3,3E+03 Frequency and Duration of Use		
Frequency and Duration of	USE	

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Continuous release.	
	200
Emission Days (days/year):	300
Environmental factors not influenced by risk management	10
Local freshwater dilution factor:	10
Local marine water dilution factor:	100
Other Operational Conditions affecting Environmental Exposure	2 222
Release fraction to air from process (initial release prior to RMM):	0,098
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
Technical conditions and measures at process level (source) to pro	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit discharge	arges, air emis-
sions and releases to soil	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no onsite	
wastewater treatment required.	
Soil emission controls are not applicable as there is no direct release	
to soil.	
Treat air emission to provide a typical removal efficiency of (%)	80
Treat onsite wastewater (prior to receiving water discharge) to provide	91,5
the required removal efficiency of >= (%)	,
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
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 p	lant
Estimated substance removal from wastewater via domestic sewage	91,5
treatment (%)	,
Total efficiency of removal from wastewater after onsite and offsite	91,5
(domestic treatment plant) RMMs (%)	
Maximum allowable site tonnage (MSafe) based on release following	4,94E+04
total wastewater treatment removal (kg/d)	
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	r disposal
Estimated amount entering waste treatment no greater than: 5%.	
Type of treatment suitable for waste: incineration.	
Removal efficiency (%): 99.98.	
Dispose of waste product or used containers according to local regulation	ons.
Treat as hazardous waste.	
Conditions and measures related to external recovery of waste	
·	

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External treatment and disposal 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 ECETOC TRA 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).

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Exposure Scenario - Worker

30000010152	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in CoatingsSolvent-based process Professional
Use Descriptor	Sector of Use: SU22 Process Categories: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC15, PROC19 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.3b.v1
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 kPa at STP	
Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100%., Unless stated otherwise.,	
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 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 sys-No other specific measures identified. tems)PROC1 Filling/ preparation of equipment No other specific measures identified. from drums or containers.with sample collection(closed systems)PROC2 General exposures (closed sys-No other specific measures identified. tems)Use in contained systemswith sample collectionPROC2 Preparation of material for appli-No other specific measures identified. cationPROC3 Film formation - air dry-Ensure operation is undertaken outdoors. ingOutdoorPROC4 Film formation - air dryingln-No other specific measures identified. doorPROC4

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Preparation of material for apparation and cation and c	oli- No other s	specific measures identified.
Preparation of material for applicationDrum/batch transfersOudoorPROC5		specific measures identified.
Material transfersDrum/batch transfersNon-dedicated facilityPROC8a		good standard of general ventilation (not less than changes per hour).
	Ensure op	peration is undertaken outdoors.
Material transfersDedicated fa tyDrum/batch transfersPROC		specific measures identified.
Roller, spreader, flow applicated IndoorPROC10	3 to 5 air (good standard of general ventilation (not less than changes per hour). able gloves tested to EN374.
Roller, spreader, flow applicationOutdoorPROC10	·	peration is undertaken outdoors. able gloves tested to EN374.
SprayingManualIndoorPROC	Wear suit	in a vented booth or extracted enclosure. able gloves tested to EN374. able coveralls to prevent exposure to the skin.
SprayingManualOutdoorPRO	better. Change fi Wear suit Wear suit	spirator conforming to EN140 with Type A filter or liter cartridge on respirator daily. able gloves tested to EN374. able coveralls to prevent exposure to the skin. rying out activities involving exposure for more than
Dipping, immersion and pouringIndoorPROC13	No other s	specific measures identified.
Dipping, immersion and pouringOutdoorPROC13	No other s	specific measures identified.
Laboratory activitiesPROC15	No other s	specific measures identified.
Hand application - fingerpaint pastels, adhesivesIndoorPROC19	3 to 5 air of Ensure op	good standard of general ventilation (not less than changes per hour). peration is undertaken outdoors. able gloves tested to EN374.
Section 2.2	Control of Env	ironmental Exposure
Substance is a unique structu	e	
Readily biodegradable.		
Very soluble in water (>10g/l).		
Slightly toxic to aquatic species.		
Low bioaccumulation potential.		
Amounts Used		
Fraction of EU tonnage used		0,1
Regional use tonnage (tonnes	/year):	50

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	T
Fraction of Regional tonnage used locally:	0,0005
Annual site tonnage (tonnes/year):	0,1
Maximum daily site tonnage (kg/day):	0,275
Frequency and Duration of Use	T
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):	0,98
Release fraction to wastewater from process (initial release prior to RMM):	0,01
Release fraction to soil from process (initial release prior to RMM):	0,01
Technical conditions and measures at process level (source) to pre	event release
Common practices vary across sites thus conservative process re-	
lease estimates used.	
Technical onsite conditions and measures to reduce or limit discha-	arges, air emis-
sions and releases to soil	
Prevent discharge of undissolved substance to or recover from onsite	
wastewater.	
If discharging to domestic sewage treatment plant, no onsite	
wastewater treatment required.	
Onsite wastewater treatment plant is not assumed.	
Treatment of air emissions is not required for the purposes of REACH	
compliance but may be needed to comply with other environmental	
legislation.	
Prevent environmental discharge consistent with regulatory require-	
ments.	
Treat air emission to provide a typical removal efficiency of (%)	
Treat onsite wastewater (prior to receiving water discharge) to provide	87,3
the required removal efficiency of >= (%)	
If discharging to domestic sewage treatment plant, provide the re-	0
quired onsite wastewater removal efficiency of (%)	
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 pl	lant
Estimated substance removal from wastewater via domestic sewage	87,3
treatment (%)	,
Total efficiency of removal from wastewater after onsite and offsite	87,3
(domestic treatment plant) RMMs (%)	,
Maximum allowable site tonnage (MSafe) based on release following	137,5
total wastewater treatment removal (kg/d)	,
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	
Estimated amount entering waste treatment no greater than: 10%.	
Type of treatment suitable for waste: approved landfill.	
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Type of treatment suitable for waste: incineration.

Removal efficiency (%): 99.98.

Dispose of waste or used sacks/containers according to local regulations.

Dispose of waste product or used containers according to local regulations.

Treat as hazardous waste.

Conditions and measures related to external recovery of waste

Not applicable.

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 ECETOC TRA 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).

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Exposure Scenario - Consumer

30000010153	
SECTION 1	EXPOSURE SCENARIO TITLE
Title	Uses in Coatings Solvent-based process Consumer
Use Descriptor	Sector of Use: SU21 Product Categories: PC9a, PC18 Environmental Release Categories: ERC8a, ERC8d, ESVOC SpERC 8.3c.v1
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 at STP
Concentration of the Substance in Mixture/Article	See specific operational conditions below.
Other Operational Condition	ns affecting Exposure
Covers use at ambient temperatures.	
Product Categories	OPERATIONAL CONDITIONS AND RISK MANAGEMENT MEASURES
Coatings and paints, thin- ners, paint removers Sol- vent rich, high solid, water borne paint.	Covers concentration up to (%): 10
	covers use up to 6 day/year
	for each use event, covers amount up to (g): 500
	covers skin contact area up to (cm2): 428
	Covers use in room size of 20m3
	Covers exposure up to 2,2 hours/event
	Avoid using without an operating fan and open windows.
	Avoid using in room with closed doors.
Coatings and paints, thin- ners, paint removers Aero- sol spray can.	Covers concentration up to (%): 10
	covers use up to 2 day/year
	for each use event, covers amount up to (g): 215
	covers skin contact area up to (cm2): 254
	Covers use in a one car garage (34 m3) under typical ventilation.
	Covers exposure up to 1 hours/event
_	Avoid using in rooms smaller than a garage - room volume of

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	at least 34 m3
Ink and toners Inks and	Covers concentration up to (%): 10
toners.	
	covers use up to (times/day of use): 1
	for each use event, covers amount up to (g): 50
	covers skin contact area up to (cm2): 71
	Covers use in room size of 20m3
	Covers use under typical household ventilation.
	Covers exposure up to 8 hours/event

Section 2.2 Control of Environmental Exposure	
Substance is a unique structure.	
Readily biodegradable.	
Very soluble in water (>10g/l).	
Slightly toxic to aquatic species.	
Low bioaccumulation potential.	
Amounts Used	
Fraction of EU tonnage used in region:	0,1
Regional use tonnage (tonnes/year):	50
Fraction of Regional tonnage used locally:	2,0E-03
Annual site tonnage (tonnes/year):	0,1
Maximum daily site tonnage (kg/day):	0,274
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	T
Release fraction to air from process (initial release prior to RMM):	0,985
Release fraction to wastewater from process (initial release prior to RMM):	0,011
Release fraction to soil from process (initial release prior to RMM):	0,005
Conditions and Measures related to municipal sewage treatment	plant
Estimated substance removal from wastewater via domestic sewage treatment (%)	87
Total efficiency of removal from wastewater after onsite and offsite (domestic treatment plant) RMMs (%)	87
Assumed domestic sewage treatment plant flow (m3/d)	2,0E+03
Conditions and Measures related to external treatment of waste for	or disposal
External treatment and disposal of waste should comply with applicable al regulations.	e local and/or region-
Estimated amount entering waste treatment no greater than: 10%.	
Treat as hazardous waste.	
Type of treatment suitable for waste: approved landfill.	
Type of treatment suitable for waste: incineration.	

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Removal efficiency (%): 99.98.

Conditions and measures related to external recovery of waste

External recovery and recycling of waste should comply with applicable local and/or regional regulations.

No suitable recovery methods available.

SECTION 3 EXPOSURE ESTIMATION

Section 3.1 - Health

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

EGRET Consumer Tool V2

Section 3.2 - Environment

Used ECETOC TRA 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).