

SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 9.2
Revision Date 26.08.2024
Print Date 27.08.2024**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1 Product identifiers**

Product name : 1-Octanol for synthesis

Product Number : 8.20931

Catalogue No. : 820931

Brand : Millipore

REACH No. : A registration number is not available for this substance as the substance or its uses are exempted from registration or the annual tonnage does not require a registration.

CAS-No. : 111-87-5

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

Identified uses : Chemical for synthesis

1.3 Details of the supplier of the safety data sheet

Company : Merck Life Science UK Limited
New Road
The Old Brickyard
GILLINGHAM
Dorset
SP8 4XT
UNITED KINGDOM

Telephone : +44 (0)1747 833-000

Fax : +44 (0)1747 833-313

E-mail address : TechnicalService@merckgroup.com

1.4 Emergency telephone

Emergency Phone # : +44 (0)870 8200418 (CHEMTREC)

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

Classification according to Regulation (EC) No 1272/2008 as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

Eye irritation, (Category 2) H319: Causes serious eye irritation.

Long-term (chronic) aquatic hazard, (Category 3) H412: Harmful to aquatic life with long lasting effects.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008 as amended by GB-CLP Regulation, UK SI 2019/720, and UK SI 2020/1567

Pictogram



Signal Word

Warning

Hazard Statements

H319

Causes serious eye irritation.

H412

Harmful to aquatic life with long lasting effects.

Precautionary Statements

P264

Wash skin thoroughly after handling.

P273

Avoid release to the environment.

P280

Wear eye protection/ face protection.

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P337 + P313

If eye irritation persists: Get medical advice/ attention.

P501

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

Supplemental Hazard Statements

none

Reduced Labeling (<= 125 ml)

Pictogram



Signal Word

Warning

Hazard Statements

H412

Harmful to aquatic life with long lasting effects.

Precautionary Statements

none

Supplemental Hazard Statements

none

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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.

SECTION 3: Composition/information on ingredients

3.1 Substances

Formula : C₈H₁₈O

Molecular weight : 130.23 g/mol
CAS-No. : 111-87-5
EC-No. : 203-917-6

Component		Classification	Concentration
1-octanol			
CAS-No.	111-87-5	Eye Irrit. 2; Aquatic Chronic 3; H319, H412	<= 100 %
EC-No.	203-917-6		

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice

Show this material safety data sheet to the doctor in attendance.

If inhaled

After inhalation: fresh air.

In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

If swallowed

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Foam Carbon dioxide (CO₂) Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters

In the event of fire, wear self-contained breathing apparatus.

5.4 Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance. For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Tightly closed.

Recommended storage temperature see product label.

Storage class

Storage class (TRGS 510): 10: Combustible liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters

Contains no substances with occupational exposure limit values.

Predicted No Effect Concentration (PNEC)

Compartment	Value
Fresh water	0.2 mg/l

Sea water	0.02 mg/l
Sewage treatment plant	5.5 mg/l
Fresh water sediment	2.1 mg/kg
Sea sediment	0.21 mg/kg
Soil	1.6 mg/kg

8.2 Exposure controls

Personal protective equipment

Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 480 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN 16523-1 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Splash contact

Material: Chloroprene

Minimum layer thickness: 0.65 mm

Break through time: 240 min

Material tested: KCL 720 Camapren®

Body Protection

protective clothing

Respiratory protection

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Control of environmental exposure

Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- | | |
|-------------------|-----------|
| a) Physical state | liquid |
| b) Color | colorless |

- | | |
|---|--|
| c) Odor | characteristic |
| d) Melting point/freezing point | Melting point/ range: -15 °C |
| e) Initial boiling point and boiling range | 196 °C at 1,013.25 hPa |
| f) Flammability (solid, gas) | No data available |
| g) Upper/lower flammability or explosive limits | Lower explosion limit: 0.8 %(V) |
| h) Flash point | 86.5 °C at ca.101.5 hPa - ASTM D 93 |
| i) Autoignition temperature | ca.294 °C at 1,013 hPa |
| j) Decomposition temperature | No data available |
| k) pH | No data available |
| l) Viscosity | Viscosity, kinematic: 5.584 mm ² /s at 40 °C - ASTM D 445 |
| | Viscosity, dynamic: 9.0 mPa.s at 20 °C |
| m) Water solubility | 107 g/l at 23 °C - partly soluble |
| n) Partition coefficient: n-octanol/water | log Pow: 3.5 at 23 °C |
| o) Vapor pressure | 0.18 hPa at 25 °C |
| p) Density | 0.8283 g/cm ³ at 15.56 °C |
| Relative density | No data available |
| q) Relative vapor density | No data available |
| r) Particle characteristics | No data available |
| s) Explosive properties | Not classified as explosive. |
| t) Oxidizing properties | none |

9.2 Other safety information

No data available

SECTION 10: Stability and reactivity

10.1 Reactivity

Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Violent reactions possible with:
Acid chlorides
Acid anhydrides

Oxidizing agents
acids
halogen compounds
Risk of explosion with:
perchloric acid
perchlorates

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - > 5,000 mg/kg

(OECD Test Guideline 401)

Inhalation: No data available

LD50 Dermal - Rabbit - male and female - > 2,000 - 4,000 mg/kg

(OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit

Result: slight irritation - 4 h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye irritation.

(OECD Test Guideline 405)

Respiratory or skin sensitization

Buehler Test - Guinea pig

Result: negative

(US-EPA)

Germ cell mutagenicity

Test Type: In vitro mammalian cell gene mutation test

Test system: Mouse lymphoma test

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 476

Result: negative

Test Type: Ames test

Test system: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Method: OECD Test Guideline 471

Result: negative

Test Type: In vivo micronucleus test

Species: Mouse

Cell type: Bone marrow

Application Route: Oral

Method: OECD Test Guideline 474
Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

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.

Repeated dose toxicity - Rat - male and female - Dermal - NOEL (No observed adverse effect level) - 1,000 mg/kg

Repeated dose toxicity - Rat - male and female - Gavage - 28 Days - NOEL (No observed adverse effect level) - > 1,000 mg/kg

Central nervous system depression, Nausea, Headache, Vomiting, narcosis
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	flow-through test LC50 - Pimephales promelas (fathead minnow) - 13.3 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to algae	static test ErC50 - Desmodesmus subspicatus (green algae) - 14 mg/l - 48 h (OECD Test Guideline 201)
Toxicity to bacteria	
Toxicity to fish(Chronic toxicity)	flow-through test NOEC - Pimephales promelas (fathead minnow) - 0.26 mg/l - 33 d (OECD Test Guideline 210)
Toxicity to daphnia and other aquatic invertebrates(Chronic	semi-static test NOEC - Daphnia magna (Water flea) - 1 mg/l - 21 d (OECD Test Guideline 211)

toxicity)

12.2 Persistence and degradability

Biodegradability aerobic - Exposure time 28 d
Result: 82.2 % - Readily biodegradable.
(OECD Test Guideline 301B)

Ratio BOD/ThBOD 32 - 62 %

12.3 Bioaccumulative potential

Does not bioaccumulate.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. Notice Directive on waste 2008/98/EC.

SECTION 14: Transport information

14.1 UN number

ADR/RID: - IMDG: - IATA: -

14.2 UN proper shipping name

ADR/RID: Not dangerous goods
IMDG: Not dangerous goods
IATA: Not dangerous goods

14.3 Transport hazard class(es)

ADR/RID: - IMDG: - IATA: -

14.4 Packaging group

ADR/RID: - IMDG: - IATA: -

14.5 Environmental hazards

ADR/RID: no

IMDG Marine pollutant: no

IATA: no

14.6 Special precautions for user

No data available

Further information : No data available

SECTION 15: Regulatory information

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Other regulations

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical Safety Assessment

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

SECTION 16: Other information

Full text of H-Statements

H319 Causes serious eye irritation.

H412 Harmful to aquatic life with long lasting effects.

Full text of other abbreviations

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; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); 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; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Further information

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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Annex: Exposure scenario

Identified uses:

Use: Industrial use

SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
SU 3, SU9, SU 10: Industrial uses: Uses of substances as such or in preparations at industrial sites, Manufacture of fine chemicals, Formulation [mixing] of preparations and/ or re-packaging (excluding alloys)
PC19: Intermediate
PC21: Laboratory chemicals
PROC1: Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC3: Use in closed batch process (synthesis or formulation)
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact)
PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities
PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)
PROC10: Roller application or brushing
PROC15: Use as laboratory reagent
ERC1, ERC2, ERC4, ERC6a, ERC6b: Manufacture of substances, Formulation of preparations, Industrial use of processing aids in processes and products, not becoming part of articles, Industrial use resulting in manufacture of another substance (use of intermediates), Industrial use of reactive processing aids

Use: Professional use

SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)
PC21: Laboratory chemicals
PROC15: Use as laboratory reagent
ERC2, ERC6a, ERC6b: Formulation of preparations, Industrial use resulting in manufacture of another substance (use of intermediates), Industrial use of reactive processing aids

1. Short title of Exposure Scenario: Industrial use

Main User Groups	: SU 3
Sectors of end-use	: SU 3, SU9, SU 10
Chemical product category	: PC19, PC21
Process categories	: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC15
Environmental Release Categories	: ERC1, ERC2, ERC4, ERC6a, ERC6b:

2. Exposure scenario

2.1 Contributing scenario controlling environmental exposure for: ERC1

Amount used

Annual amount per site : 105000 t
Daily amount per site (Msafe) : 350 t

Environment factors not influenced by risk management

Flow rate : 18,000 m3/d
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Number of emission days per year : 300
Emission or Release Factor: Air : 5 %
Emission or Release Factor: Water : 0.01 %
Emission or Release Factor: Soil : 0.01 %

Technical conditions and measures / Organizational measures

Water : Ensure all waste water is collected and treated via a WWTP.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent : 2,000 m3/d
Percentage removed from waste water : 96.5 %

Conditions and measures related to external treatment of waste for disposal

Waste treatment : Aqueous waste to be treated in on-site or municipal secondary biological treatment plants prior to discharge.

2.1 Contributing scenario controlling environmental exposure for: ERC2

Amount used

Annual amount per site : 3500 t
Daily amount per site (Msafe) : 11.6 t

Environment factors not influenced by risk management

Flow rate : 18,000 m3/d
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Number of emission days per year : 300
Emission or Release Factor: Air : 2.5 %
Emission or Release Factor: Water : 0.3 %

Emission or Release Factor: Soil : 0.01 %

Technical conditions and measures / Organizational measures

Water : Ensure all waste water is collected and treated via a WWTP.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment plant effluent : 2,000 m3/d

Percentage removed from waste water : 96.5 %

Conditions and measures related to external treatment of waste for disposal

Waste treatment : Aqueous waste to be treated in on-site or municipal secondary biological treatment plants prior to discharge.

2.1 Contributing scenario controlling environmental exposure for: ERC4

Amount used

Annual amount per site : 352 t

Daily amount per site (Msafe) : 1,176 kg

Environment factors not influenced by risk management

Flow rate : 18,000 m3/d

Dilution Factor (River) : 10

Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Number of emission days per year : 300

Emission or Release Factor: Air : 100 %

Emission or Release Factor: : 3 %

Water

Emission or Release Factor: Soil : 5 %

Technical conditions and measures / Organizational measures

Water : Ensure all waste water is collected and treated via a WWTP.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment plant effluent : 2,000 m3/d

Percentage removed from waste water : 96.5 %

Conditions and measures related to external treatment of waste for disposal

Waste treatment : Aqueous waste to be treated in on-site or municipal secondary biological treatment plants prior to discharge.

2.1 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount per site : 1510 t

Daily amount per site (Msafe) : 5 t

Environment factors not influenced by risk management

Flow rate : 18,000 m3/d

Dilution Factor (River) : 10

Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Number of emission days per year : 300
Emission or Release Factor: Air : 5 %
Emission or Release Factor: Water : 0.7 %
Emission or Release Factor: Soil : 0.1 %

Technical conditions and measures / Organizational measures

Water : Ensure all waste water is collected and treated via a WWTP.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent : 2,000 m3/d
Percentage removed from waste water : 96.5 %

Conditions and measures related to external treatment of waste for disposal

Waste treatment : Aqueous waste to be treated in on-site or municipal secondary biological treatment plants prior to discharge.

2.1 Contributing scenario controlling environmental exposure for: ERC6b**Amount used**

Annual amount per site : 1058 t
Daily amount per site (Msafe) : 3.5 t

Environment factors not influenced by risk management

Flow rate : 18,000 m3/d
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Number of emission days per year : 300
Emission or Release Factor: Air : 0.1 %
Emission or Release Factor: Water : 1 %
Emission or Release Factor: Soil : 0.02 %

Technical conditions and measures / Organizational measures

Water : Ensure all waste water is collected and treated via a WWTP.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent : 2,000 m3/d
Percentage removed from waste water : 96.5 %

Conditions and measures related to external treatment of waste for disposal

Waste treatment : Aqueous waste to be treated in on-site or municipal secondary biological treatment plants prior to discharge.

2.6 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC10, PROC15**Product characteristics**

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
 Physical Form (at time of use) : Low volatile liquid
 Process Temperature : < 86 °C

Frequency and duration of use

Frequency of use : 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor without local exhaust ventilation (LEV)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves (tested to EN374) and eye protection.

2.7 Contributing scenario controlling worker exposure for: PROC10

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
 Physical Form (at time of use) : Low volatile liquid
 Process Temperature : < 86 °C

Frequency and duration of use

Frequency of use : 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor without local exhaust ventilation (LEV)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves (tested to EN374) and eye protection., During spraying, wear suitable respiratory equipment.

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR*
ERC1	EUSES		Fresh water sediment		350t/day	0.99
ERC2	EUSES		Fresh water sediment		11.6t/day	0.99
ERC4	EUSES		Fresh water sediment		1176kg/day	1
ERC6a	EUSES		Fresh water sediment		5t/day	1
ERC6a	EUSES		Fresh water sediment		3.5t/day	1

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR*
PROC1	Qualitative assessment				< 1

	used to conclude safe use.				
PROC2	Qualitative assessment used to conclude safe use.				< 1
PROC3	Qualitative assessment used to conclude safe use.				< 1
PROC4	Qualitative assessment used to conclude safe use.				< 1
PROC5	Qualitative assessment used to conclude safe use.				< 1
PROC8a	Qualitative assessment used to conclude safe use.				< 1
PROC8b	Qualitative assessment used to conclude safe use.				< 1
PROC9	Qualitative assessment used to conclude safe use.				< 1
PROC15	Qualitative assessment used to conclude safe use.				< 1
*Risk characterisation ratio					
PROC10	Qualitative assessment used to conclude safe use.				< 1

*Risk characterisation ratio

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for downstream users; ECHA Guidance on information requirements and chemical safety

assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).

1. Short title of Exposure Scenario: Professional use

Main User Groups	: SU 22
Sectors of end-use	: SU 22
Chemical product category	: PC21
Process categories	: PROC15
Environmental Release Categories	: ERC2, ERC6a, ERC6b:

2. Exposure scenario

2.1 Contributing scenario controlling environmental exposure for: ERC2

Amount used

Annual amount per site	: 3500 t
Daily amount per site (Msafe)	: 11.6 t

Environment factors not influenced by risk management

Flow rate	: 18,000 m ³ /d
Dilution Factor (River)	: 10
Dilution Factor (Coastal Areas)	: 100

Other given operational conditions affecting environmental exposure

Number of emission days per year	: 300
Emission or Release Factor: Air	: 2.5 %
Emission or Release Factor: Water	: 0.3 %
Emission or Release Factor: Soil	: 0.01 %

Technical conditions and measures / Organizational measures

Water	: Ensure all waste water is collected and treated via a WWTP.
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Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant	: Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent	: 2,000 m ³ /d
Percentage removed from waste water	: 96.5 %

Conditions and measures related to external treatment of waste for disposal

Waste treatment	: Aqueous waste to be treated in on-site or municipal
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secondary biological treatment plants prior to discharge.

2.1 Contributing scenario controlling environmental exposure for: ERC6a

Amount used

Annual amount per site : 1510 t
Daily amount per site (Msafe) : 5 t

Environment factors not influenced by risk management

Flow rate : 18,000 m³/d
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Number of emission days per year : 300
Emission or Release Factor: Air : 5 %
Emission or Release Factor: Water : 0.7 %
Emission or Release Factor: Soil : 0.1 %

Technical conditions and measures / Organizational measures

Water : Ensure all waste water is collected and treated via a WWTP.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant
Flow rate of sewage treatment plant effluent : 2,000 m³/d
Percentage removed from waste water : 96.5 %

Conditions and measures related to external treatment of waste for disposal

Waste treatment : Aqueous waste to be treated in on-site or municipal secondary biological treatment plants prior to discharge.

2.1 Contributing scenario controlling environmental exposure for: ERC6b

Amount used

Annual amount per site : 1058 t
Daily amount per site (Msafe) : 3.5 t

Environment factors not influenced by risk management

Flow rate : 18,000 m³/d
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Other given operational conditions affecting environmental exposure

Number of emission days per year : 300
Emission or Release Factor: Air : 0.1 %
Emission or Release Factor: Water : 1 %
Emission or Release Factor: Soil : 0.02 %

Technical conditions and measures / Organizational measures

Water : Ensure all waste water is collected and treated via a WWTP.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment : 2,000 m3/d
plant effluent
Percentage removed from waste : 96.5 %
water

Conditions and measures related to external treatment of waste for disposal

Waste treatment : Aqueous waste to be treated in on-site or municipal secondary biological treatment plants prior to discharge.

2.4 Contributing scenario controlling worker exposure for: PROC15

Product characteristics

Concentration of the Substance in Mixture/Article : Covers the percentage of the substance in the product up to 100 % (unless stated differently).
Physical Form (at time of use) : Low volatile liquid
Process Temperature : < 86 °C

Frequency and duration of use

Frequency of use : 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor without local exhaust ventilation (LEV)

Conditions and measures related to personal protection, hygiene and health evaluation

Wear suitable gloves (tested to EN374) and eye protection.

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Exposure Assessment Method	Specific conditions	Compartment	Value	Level of Exposure	RCR*
ERC2	EUSES		Fresh water sediment		11.6t/day	0.99
ERC6a	EUSES		Fresh water sediment		5t/day	1
ERC6a	EUSES		Fresh water sediment		3.5t/day	1

Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR*
PROC15	Qualitative assessment used to conclude safe use.				< 1

*Risk characterisation ratio

4. Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

Please refer to the following documents: ECHA Guidance on information requirements and chemical safety assessment Chapter R.12: Use descriptor system; ECHA Guidance for

downstream users; ECHA Guidance on information requirements and chemical safety assessment Part D: Exposure Scenario Building, Part E: Risk Characterisation and Part G: Extending the SDS; VCI/Cefic REACH Practical Guides on Exposure Assessment and Communications in the Supply Chain; CEFIC Guidance Specific Environmental Release Categories (SPERCs).