SAFETY DATA SHEET

according to REACH Regulation (EC) No. 1907/2006, as amended by UK REACH Regulations SI 2019/758

TCD alcohol DM (packed)
10660

Version / Revision	9.01	**Revision Date**	27-Jan-2023
Supersedes Version	9.00***	**Issuing date**	27-Jan-2023

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

1.1. Product identifier

Identification of the substance/preparation **TCD alcohol DM (packed)**

Chemical Name	Tricyclodecanedimethanol / Octahydro-4,7-methano-1H-indenedimethanol
CAS-No	26896-48-0 / 26160-83-8
EC No.	248-096-5 / 247-488-3

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

Identified uses	Formulation cleaning agent Intermediate Polymerization laboratory chemicals
Uses advised against	None

1.3. Details of the supplier of the safety data sheet

Company/Undertaking Identification	**OQ Chemicals GmbH** Rheinpromenade 4A D-40789 Monheim Germany
Product Information	Product Stewardship FAX: +49 (0)208 693 2053 email: sc.psq@oq.com

1.4. Emergency telephone number

Emergency telephone number	+44 (0) 1235 239 670 (UK) available 24/7

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

This substance is classified based on Directive 1272/2008/EC and its amendments (CLP Regulation)

Serious eye damage/eye irritation Category 2, H319

Additional information
For full text of Hazard- and EU Hazard-statements see SECTION 16.

2.2. Label elements

Labelling according to Regulation 1272/2008/EC and its amendments (CLP Regulation).

Hazard pictograms

Signal word	**Warning**
Hazard statements	H319: Causes serious eye irritation.
Precautionary statements	P280: Wear protective gloves/protective clothing/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.

2.3. Other hazards

None known

PBT and vPvB assessment	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)
Endocrine disrupting assessments	The substance is not listed on the candidate list according to Art. 59(1), REACh. The substance was not assessed as having endocrine disrupting properties according to regulation 2017/2100/EU or 2018/605/EU.

SECTION 3: Composition / information on ingredients

3.1. Substances

Component	CAS-No	1272/2008/EC	Concentration (%)
Tricyclodecanedimethanol	26896-48-0	Eye Irrit. 2; H319	> 97

Remarks
CAS 26896-48-0 Tricyclodecanedimethanol
CAS 26160-83-8 Octahydro-4,7-methano-1H-indenedimethanol.
For full text of Hazard- and EU Hazard-statements see SECTION 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation
Keep at rest. Aerate with fresh air. When symptoms persist or in all cases of doubt seek medical advice.

Skin
Wash off immediately with plenty of water. When symptoms persist or in all cases of doubt seek medical advice.

Eyes
Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses. Immediate medical attention is required.

Ingestion
Call a physician immediately. Do not induce vomiting without medical advice.

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

Main symptoms
None known.

Special hazard
Lung irritation.

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

General advice
Remove contaminated, soaked clothing immediately and dispose of safely. First aider needs to protect himself.

Treat symptomatically. If ingested, irrigate the stomach using activated charcoal.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media
foam, dry chemical, carbon dioxide (CO2), water spray

Unsuitable Extinguishing Media
Do not use a solid water stream as it may scatter and spread fire.

5.2. Special hazards arising from the substance or mixture

Under conditions giving incomplete combustion, hazardous gases produced may consist of:
carbon monoxide (CO)
carbon dioxide (CO2)
Combustion gases of organic materials must in principle be graded as inhalation poisons
Vapours are heavier than air and may spread along floors

5.3. Advice for firefighters

Special protective equipment for firefighters
Fire fighter protection should include a self-contained breathing apparatus (NIOSH-approved or EN 133) and full fire-fighting turn out gear.

Precautions for firefighting
Cool containers / tanks with water spray. Dike and collect water used to fight fire. Keep people away from and upwind of fire.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: For personal protective equipment see section 8. Avoid contact with skin and eyes. Avoid breathing vapors or mists. Keep people away from and upwind of spill/leak. Ensure adequate ventilation, especially in confined areas. Keep away from heat and sources of ignition.
For emergency responders: Personal protection see section 8.

6.2. Environmental precautions

Prevent further leakage or spillage. Do not discharge product into the aquatic environment without pretreatment (biological treatment plant).

6.3. Methods and material for containment and cleaning up

Methods for containment
Stop the flow of material, if possible without risk. Dike spilled material, where this is possible.

Methods for cleaning up
Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. If liquid has been spilt in large quantities clean up promptly by scoop or vacuum. Dispose of in accordance with local regulations. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours).

6.4. Reference to other sections

For personal protective equipment see section 8.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Further info may be available in the appropriate Exposure scenarios in the annex to this SDS.

Advice on safe handling
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Provide sufficient air exchange and/or exhaust in work rooms.

Hygiene measures
When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Advice on the protection of the environment
See Section 8: Environmental exposure controls.

Incompatible products
strong oxidizing agents

7.2. Conditions for safe storage, including any incompatibilities

Advice on protection against fire and explosion
Keep away from sources of ignition - No smoking. Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapours). In case of fire, emergency cooling with water spray should be available. Ground and bond containers when transferring material.

Technical measures/Storage conditions
Keep containers tightly closed in a cool, well-ventilated place. Handle and open container with care.

Temperature class
T3

7.3. Specific end use(s)

Formulation
cleaning agent

Intermediate
Polymerization
laboratory chemicals
For specific end use information see the annex of this safety data sheet

SECTION 8: Exposure controls / personal protection

8.1. Control parameters

Exposure limits European Union

No exposure limits established

Exposure limits UK

No exposure limits established.

DNEL & PNEC

Tricyclodecanedimethanol, CAS: 26896-48-0
Workers

DN(M)EL - long-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - local effects - Inhalation	Hazard unknown (no further information necessary)
DN(M)EL - acute / short-term exposure - local effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - long-term exposure - local effects - Dermal	Hazard unknown (no further information necessary)
DN(M)EL - acute / short-term exposure - local effects - Dermal	No hazard identified
DN(M)EL - local effects - eyes	low hazard

General population

DN(M)EL - long-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - local effects - Inhalation	Hazard unknown (no further information necessary)
DN(M)EL - acute / short-term exposure - local effects - Inhalation	No hazard identified
DN(M)EL - long-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Dermal	No hazard identified
DN(M)EL - long-term exposure - local effects - Dermal	Hazard unknown (no further information necessary)
DN(M)EL - acute / short-term exposure - local effects - Dermal	No hazard identified
DN(M)EL - long-term exposure - systemic effects - Oral	No hazard identified
DN(M)EL - acute / short-term exposure - systemic effects - Oral	No hazard identified
DN(M)EL - local effects - eyes	low hazard

Environment

PNEC aqua - freshwater	100,3 µg/l
PNEC aqua - marine water	10,03 µg/l
PNEC aqua - intermittent releases	1,003 mg/l
PNEC STP	44 mg/l
PNEC sediment - freshwater	529,68 µg/kg dw
PNEC sediment - marine water	52,97 mg/kg dw
PNEC Air	No hazard identified
PNEC soil	47 µg/kg dw
Secondary poisoning	No potential for bioaccumulation

8.2. Exposure controls

Special adaptations (REACh)
Not applicable.

Appropriate Engineering controls
General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred. Explosion-proof equipment (for example fans, switches, and grounded ducts) should be used in mechanical ventilation systems.

Personal protective equipment

General industrial hygiene practice
Avoid contact with skin, eyes and clothing. Do not breathe vapours or spray mist. Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene measures
When using, do not eat, drink or smoke. Take off all contaminated clothing immediately. Wash hands before breaks and immediately after handling the product.

Eye protection
Tightly fitting safety goggles. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.
Equipment should conform to EN 166

Hand protection
Wear protective gloves. Recommendations are listed below. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Suitable material	nitrile rubber
Reference substance	Di-(2-ethylhexyl)-phthalate
Evaluation	according to EN 374: level 6
Glove thickness	approx 0,55 mm
Break through time	> 480 min

Suitable material	polyvinylchloride
Reference substance	Di-(2-ethylhexyl)-phthalate
Evaluation	Information derived from practical experience
Glove thickness	approx 0.8 mm

Skin and body protection
Impervious clothing. Wear face-shield and protective suit for abnormal processing problems.

Environmental exposure controls

If possible use in closed systems. If leakage can not be prevented, the substance needs to be suck off at the emersion point, if possible without danger. If recycling is not practicable, dispose of in compliance with local regulations. Inform the responsible authorities in case of leakage into the atmosphere, or of entry into waterways, soil or drains.

Additional advice
Further details on substance data can be found in the registration dossier under the following link: http://echa.europa.eu/information-on-chemicals/registered-substances. For specific exposure controls see the annex to this safety data sheet.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Very viscous
Colour	colourless
Odour	mild
Odour threshold	No data available
Melting point/freezing point	18 °C (Pour point)
Method	DIN ISO 3016
Boiling point or initial boiling point and boiling range	334,5 °C @ 1013 hPa
Method	OECD 103
Flammability	Even if not classified as flammable, the product is capable of catching fire or being set on fire.***
Lower explosion limit	No data available
Upper explosion limit	No data available
Flash point	191 °C @ 1013 hPa
Method	ISO 2719
Autoignition temperature	270 °C @ 1013 hPa
Method	EU A.15
Decomposition temperature	No data available
pH	neutral
Kinematic Viscosity	46302 mm²/s @ 40 °C 12411971 mm²/s @ 20 °C
Method	OECD 114
Solubility	11 g/l @ 20 °C, in water, OECD 105
Partition coefficient n-octanol/water (log value)	1,2 - 2,1 (measured) OECD 117

Vapour pressure

Values [hPa]	Values [kPa]	Values [atm]	@ °C	@ °F	Method
< 1	< 0,1	< 0,001	20	68	

Density and/or relative density

Values	@ °C	@ °F	Method
1,136	20	68	DIN 51757

Relative vapour density	No data available
Particle characteristics	not applicable

9.2. Other information

Explosive properties	Does not apply, substance is not explosive. There are no chemical groups associated with explosive properties
Oxidizing properties	Does not apply, substance is not oxidising. There are no chemical groups associated with oxidizing properties
Molecular weight	196,28

Molecular formula	C12 H20 O2
log Koc	1,226 calculated
Refractive index	1,520 @ 50 °C
Surface tension	58,9 mN/m (1 g/l @ 20°C (68°F)), OECD 115
Evaporation rate	No data available

SECTION 10: Stability and Reactivity

10.1. Reactivity

The reactivity of the product corresponds to the typical reactivity shown by the substance group as described in any text book on organic chemistry.

10.2. Chemical stability

Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous polymerisation does not occur.

10.4. Conditions to avoid

Avoid contact with heat, sparks, open flame and static discharge. Avoid any source of ignition.

10.5. Incompatible materials

strong oxidizing agents.

10.6. Hazardous decomposition products

No decomposition if stored and applied as directed.

SECTION 11: Toxicological information

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

Likely routes of exposure Skin contact, Eye contact, Ingestion

Acute toxicity				
Tricyclodecanedimethanol (26896-48-0)				
Routes of Exposure	Endpoint	Values	Species	Method
Oral	LD50	2250 mg/kg	rat, female	OECD 401
Dermal	LD50	> 10000 mg/kg	rat, male/female	OECD 402

Tricyclodecanedimethanol, CAS: 26896-48-0
Assessment
Based on available data, the classification criteria are not met for:
Acute oral toxicity
Acute dermal toxicity
For acute inhalation toxicity, no data are available

Irritation and corrosion
Tricyclodecanedimethanol (26896-48-0)

Target Organ Effects	Species	Result	Method	
Skin	rabbit	No skin irritation	US Fed. Reg. 187	24h
Eyes	rabbit	irritating	US Fed. Reg. 187	24h

Tricyclodecanedimethanol, CAS: 26896-48-0

Assessment

The available data lead to the classification given in section 2
Based on available data, the classification criteria are not met for:
skin irritation/corrosion
For respiratory irritation, no data are available

Sensitization				
Tricyclodecanedimethanol (26896-48-0)				
Target Organ Effects	Species	Evaluation	Method	
Skin	guinea pig	not sensitizing	OECD 406	in vivo

Tricyclodecanedimethanol, CAS: 26896-48-0

Assessment

Based on available data, the classification criteria are not met for:
Skin sensitization
For respiratory sensitization, no data are available

Subacute, subchronic and prolonged toxicity				
Tricyclodecanedimethanol (26896-48-0)				
Type	Dose	Species	Method	
Subacute toxicity	NOAEL: 600 mg/kg/d (28d)	rat, male/female	OECD 422	Oral
Subchronic toxicity	NOAEL: 1000 mg/kg/d (90d)	rat, male/female	OECD 408	Oral

Tricyclodecanedimethanol, CAS: 26896-48-0

Assessment

Based on available data, the classification criteria are not met for:
STOT RE

Carcinogenicity, Mutagenicity, Reproductive toxicity					
Tricyclodecanedimethanol (26896-48-0)					
Type	Dose	Species	Evaluation	Method	
Mutagenicity		CHO (Chinese Hamster Ovary) cells	negative	OECD 473 (Chromosomal Aberration)	In vitro study
Mutagenicity		CHO (Chinese Hamster Ovary) cells	negative	OECD 476 (Mammalian Gene Mutation)	In vitro study
Mutagenicity		Salmonella typhimurium	negative	OECD 471 (Ames)	In vitro study
Reproductive toxicity	NOAEL 600 mg/kg/d	rat, parental		OECD 422, Oral	
Reproductive toxicity	NOAEL 600 mg/kg/d	rat, 1. Generation, male/female		OECD 422, Oral	
Developmental Toxicity	NOAEL 600 mg/kg/d	rat, parental		OECD 422, Oral	
Developmental Toxicity	NOAEL 600	rat, 1.		OECD 422, Oral	

	mg/kg/d	Generation, male/female			
Developmental Toxicity	NOAEL 500 mg/kg/d	rat		OECD 414, Oral	Maternal toxicity
Developmental Toxicity	NOAEL 1000 mg/kg/d	rat		OECD 414, Oral	Developmental toxicity

Tricyclodecanedimethanol, CAS: 26896-48-0
CMR Classification
The available data on CMR properties are summarized in the table above. They do not indicate a classification into categories 1A or 1B
Evaluation
In vitro tests did not show mutagenic effects
Animal testing did not show any effects on fertility
In the absence of specific alerts no cancer testing is required

Tricyclodecanedimethanol, CAS: 26896-48-0
Target Organ Systemic Toxicant - Single exposure
Based on available data, the classification criteria are not met for:
STOT SE
Target Organ Systemic Toxicant - Repeated exposure
Based on available data, the classification criteria are not met for:
STOT RE
Aspiration toxicity
Due to the viscosity, this product does not present an aspiration hazard

11.2. Information on other hazards

Endocrine disrupting properties
The substance has not been identified as having endocrine disrupting properties in accordance with section 2.3.
Note
Handle in accordance with good industrial hygiene and safety practice. Further details on substance data can be found in the registration dossier under the following link:
http://echa.europa.eu/information-on-chemicals/registered-substances.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic toxicity			
Tricyclodecanedimethanol (26896-48-0)			
Species	Exposure time	Dose	Method
Oncorhynchus mykiss (rainbow trout)	96h	LC50: 100,3 mg/l	OECD 203
Daphnia magna (Water flea)	48h	EC50: > 100 mg/l	OECD 202
Pseudokirchneriella subcapitata	72h	EC50: > 100 mg/l (Growth rate)	OECD 201
Activated sludge (bacteriae)	3 h	EC50: 2400 mg/l	OECD 209

Long term toxicity				
Tricyclodecanedimethanol (26896-48-0)				
Type	Species	Dose	Method	
Aquatic toxicity	Pseudokirchneriella subcapitata	NOEC: 100 mg/l	OECD 201	

Terrestrial toxicity				
Tricyclodecanedimethanol (26896-48-0)				
Species	Exposure time	Dose	Type	Method
Eisenia fetida / Eisenia andrej	28 d	LC50: > 1000 mg/kg soil dw	Parental mortality	OECD 222
Eisenia fetida / Eisenia andrej	56 d	NOEC: 59 mg/kg soil dw	Reproduction	OECD 222
Eisenia fetida / Eisenia andrej	56 d	EC10: 39 mg/kg soil dw	Reproduction	OECD 222
Soil microorganism	28 d	NOEC: 320 mg/kg soil dw	Nitrogen transformation	OECD 216

12.2. Persistence and degradability

Tricyclodecanedimethanol, CAS: 26896-48-0
Biodegradation
0 % (28 d), activated sludge (domestic), non-adapted, aerobic, OECD 301 B, Not readily biodegradable.

Abiotic Degradation		
Tricyclodecanedimethanol (26896-48-0)		
Type	Result	Method
Hydrolysis	not expected	
Photolysis	No data available	

12.3. Bioaccumulative potential

Tricyclodecanedimethanol (26896-48-0)		
Type	Result	Method
log Pow	1,2 - 2,1	measured, OECD 117
BCF	5,866	calculated

12.4. Mobility in soil

Tricyclodecanedimethanol (26896-48-0)		
Type	Result	Method
Adsorption/Desorption	Koc: 16,81	calculated
Surface tension	58,9 mN/m (1 g/l @ 20°C (68°F))	OECD 115
Distribution to environmental compartments	no data available	

12.5. Results of PBT and vPvB assessment

Tricyclodecanedimethanol, CAS: 26896-48-0
PBT and vPvB assessment
This substance is not considered to be persistent, bioaccumulating nor toxic (PBT), nor very persistent nor very bioaccumulating (vPvB)

12.6. Endocrine disrupting properties

The substance has not been identified as having endocrine disrupting properties in accordance with section 2.3.

12.7. Other adverse effects

Tricyclodecanedimethanol, CAS: 26896-48-0
No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product Information
Disposal required in compliance with all waste management related state and local regulations. The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.
Hazardous waste according to European Waste Catalogue (EWC)

Uncleaned empty packaging
Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

SECTION 14: Transport information

Section 14.1 - 14.6

ADR/RID	Not restricted
ADN	Not restricted
ICAO-TI / IATA-DGR	Not restricted
IMDG	Not restricted
14.7. Maritime transport in bulk according to IMO instruments	not applicable

SECTION 15: Regulatory information

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

Regulation 1272/2008, Annex VI
not listed

DI 2012/18/EU (Seveso III)
Category not subject

DI 1999/13/EC (VOC Guideline)

Component	Status

Tricyclodecanedimethanol CAS: 26896-48-0	not subject

The REACH etc. (Amendment etc.) (EU Exit) Regulations 2019 No. 758

Component	Status
Tricyclodecanedimethanol CAS: 26896-48-0	The substance will not be pre-registered

For details and further information please refer to the original regulation.

International Inventories

Octahydro-4,7-methano-1H-indenedimethanol, CAS: 26160-83-8
DSL (CA)
IECSC (CN)
EC-No. 2474883 (EU)
ENCS (4)-641 (JP)
ISHL (4)-641 (JP)
PICCS (PH)
TCSI (TW)

Tricyclodecanedimethanol, CAS: 26896-48-0
AICS (AU)
DSL (CA)
IECSC (CN)
EC-No. 2480965 (EU)
ENCS (4)-641 (JP)
ISHL (4)-641 (JP)
KECI 2001-3-1986 (KR)
PICCS (PH)
TSCA (US)
NZIoC-NZ with note
TCSI (TW)

National regulatory information Great Britain

Releases to air (Pollution Inventory Substances)
not subject

Releases to water (Pollution Inventory Substances)
not subject

Releases to sewer (Pollution Inventory Substances)
not subject
For details and further information please refer to the original regulation

15.2. Chemical safety assessment

The Chemical Safety Report (CSR) has been generated. For Exposure Scenarios see the annex.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3
H319: Causes serious eye irritation.

Abbreviations
A table of terms and abbreviations can be found under the following link:
http://echa.europa.eu/documents/10162/13632/information_requirements_r20_en.pdf

Training advice
For effective first-aid, special training / education is needed.

Sources of key data used to compile the datasheet
Information contained in this safety data sheet is based on OQ owned data and public sources deemed valid or acceptable. The absence of data elements required by OSHA, ANSI or Annex II, Regulation 1907/2006/EC indicates, that no data meeting these requirements is available.

Further information for the safety data sheet
Changes against the previous version are marked by ***. Observe national and local legal requirements. For more information, other material safety data sheets or technical data sheets please consult the OQ homepage (www.chemicals.oq.com).

Disclaimer
For industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. OQ Chemicals makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards.

End of Safety Data Sheet

Annex to the extended Safety Data Sheet (eSDS)

Exposure scenario identification

1 Formulation & (re)packing of substances and mixtures
2 Use in Cleaning Products
3 Use in Cleaning Products
4 Use in Cleaning Products
5 Use as Intermediate and in Polymerisation
6 Use in laboratories
7 Use in laboratories

Number of the ES 1

Short title of the exposure scenario
Formulation & (re)packing of substances and mixtures

List of use descriptors

Sector of uses [SU]
SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

Process categories [PROC]
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
PROC14: production of preparations or articles by tabletting, compression, extrusion, pelettisation
PROC15: Use as laboratory reagent
PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

Environmental release categories [ERC]
ERC2: Formulation of preparations (mixtures)

Product characteristics
Refer to attached safety data sheets

Processes and activities covered by the exposure scenario
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, maintenanance and associated laboratory activities.

Further explanations
Industrial use
Human health hazard assessment:
For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario **1**
Contributing exposure scenario controlling environmental exposure for ERC 2

Further specification

assessment tool used: Chesar 2.2 Specific Environmental Release Categories [SPERC] release factors for (Sp)ERC were modified
Product characteristics
Covers percentage substance in the product up to 100 % (unless stated differently).
Amounts used
Daily amount per site: 1.1 to
Annual amount per site: 11 to
Fraction of Regional tonnage used locally: 1
Environment factors not influenced by risk management
River flow rate: 18000 m³/d
Other given operational conditions affecting environmental exposure
Indoor/Outdoor use
Technical conditions and measures at process level (source) to prevent release
Release fraction to air from process: 1%
Release fraction to wastewater from process: 0.15%
Release fraction to soil from process: 0.01%
Conditions and measures related to municipal sewage treatment plant
Size of municipal sewage system/ treatment plant (m³/d): 2000
The minimum grade of elimination in the sewage plant is (%): 0,228
Conditions and measures related to external treatment of waste for disposal
none

Conditions and measures related to external recovery of waste
none

Number of the contributing scenario 2
Contributing exposure scenario controlling worker exposure for
PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 14, PROC 15

Further specification
Qualitative approach used to conclude safe use.
Product characteristics
Covers percentage substance in the product: >=10 %
Frequency and duration of use
Frequency and duration of use 8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor and outdoor use
Organisational measures to prevent /limit releases, dispersion and exposure
Regular cleaning of equipment and work area
Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Training for staff on good practice
Good standard of personal hygiene
Minimization of manual phases
Work procedures minimizing of splashes and spills
Avoidance of contact with contaminated tools and objects
Conditions and measures related to personal protection, hygiene and health evaluation
Full skin coverage with appropriate light-weight barrier material. Wear suitable gloves (tested to EN374) and eye protection.

Exposure estimation and reference to its source

Environment
PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 0.082 mg/l; RCR: 0.821
Fresh Water (Sediment)	PEC: 0.435 mg/kg dw; RCR: 0.821
Marine Water (Pelagic)	PEC: 0.008 mg/l; RCR: 0.821
Marine Water (Sediment)	PEC: 0.043 mg/kg dw; RCR: < 0.01
Agricultural Soil	PEC: 0.008 mg/kg dw; RCR: 0.176
Sewage Treatment Plant (Effluent)	PEC: 0.82 mg/l; RCR: 0.019

Human exposure prediction (oral, dermal, inhalative)
Oral exposure is not expected to occur.

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES
Usage of relase factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:
Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Number of the ES 2

Short title of the exposure scenario

Use in Cleaning Products

List of use descriptors

Sector of uses [SU]
SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Process categories [PROC]
PROC1: Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
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
PROC10: Roller application or brushing
PROC11: Non industrial spraying
PROC15: Use as laboratory reagent

Environmental release categories [ERC]
ERC8a: Wide dispersive indoor use of processing aids in open systems

Product characteristics
Refer to attached safety data sheets

Processes and activities covered by the exposure scenario
Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

Further explanations
Professional use
Human health hazard assessment:
For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario **1**
Contributing exposure scenario controlling environmental exposure for ERC 8a

Further specification

assessment tool used:, Chesar 2.2.
Product characteristics
Covers percentage substance in the product up to 100 % (unless stated differently).
Amounts used
daily wide dispersive use: 1.65E-6 to/d
Amounts used (EU): 3 to/a
Environment factors not influenced by risk management
River flow rate: 18000 m³/d
Other given operational conditions affecting environmental exposure
Indoor/Outdoor use
Technical conditions and measures at process level (source) to prevent release
Release fraction to air from process: 100 %
Release fraction to wastewater from process: 100 %
Release fraction to soil from process: 0%
Conditions and measures related to municipal sewage treatment plant
Size of municipal sewage system/ treatment plant (m³/d): 2000
The minimum grade of elimination in the sewage plant is (%): 0.228

Conditions and measures related to external treatment of waste for disposal
none
Conditions and measures related to external recovery of waste
none

Number of the contributing scenario 2
Contributing exposure scenario controlling worker exposure for
PROC 1, PROC 2, PROC 4, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 15

Further specification
Qualitative approach used to conclude safe use.
Product characteristics
Covers percentage substance in the product: >=10 %
Frequency and duration of use
8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor and outdoor use
Organisational measures to prevent /limit releases, dispersion and exposure
Regular cleaning of equipment and work area
Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Training for staff on good practice
Good standard of personal hygiene
Minimization of manual phases
Work procedures minimizing of splashes and spills
Avoidance of contact with contaminated tools and objects
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Exposure estimation and reference to its source

Environment
Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 1,11E-4 mg/l; RCR: < 0,01
Fresh Water (Sediment)	PEC: 5.86E-4 mg/kg dw; RCR: < 0.01
Marine Water (Pelagic)	PEC: 1.114E-5 mg/l; RCR: < 0.01
Marine Water (Sediment)	PEC: 5.881E-5 mg/kg dw; RCR: < 0.01
Agricultural Soil	PEC: 9.464E-6 mg/kg dw; RCR: < 0.01
Sewage Treatment Plant (Effluent)	PEC: 8.231E-4 mg/l; RCR: < 0.01

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES
Usage of relase factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:
Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Number of the ES 3

Short title of the exposure scenario
Use in Cleaning Products

List of use descriptors

Sector of uses [SU]
SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Process categories [PROC]
PROC1: Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises
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
PROC11: Non industrial spraying
PROC15: Use as laboratory reagent

Environmental release categories [ERC]
ERC8d: Wide dispersive outdoor use of processing aids in open systems

Product characteristics
Refer to attached safety data sheets

Processes and activities covered by the exposure scenario
Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

Further explanations
Professional use
Human health hazard assessment:
For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Number of the contributing scenario **1**
Contributing exposure scenario controlling environmental exposure for ERC 8d

Further specification

assessment tool used:, Chesar 2.2.
Product characteristics
Covers percentage substance in the product up to 100 % (unless stated differently).
Amounts used
daily wide dispersive use: 1.65E-6 to/d
Fraction of EU tonnage used in region: 10%
Environment factors not influenced by risk management
River flow rate: 18000 m³/d
Other given operational conditions affecting environmental exposure
Indoor/Outdoor use
Technical conditions and measures at process level (source) to prevent release
Release fraction to air from wide dispersive use (regional only): 100 %
Release fraction to wastewater from wide dispersive use: 100 %
Release fraction to soil from wide dispersive use (regional only): 20%
Conditions and measures related to municipal sewage treatment plant
Size of municipal sewage system/ treatment plant (m³/d): 2000
The minimum grade of elimination in the sewage plant is (%): 0.228
Conditions and measures related to external treatment of waste for disposal
none
Conditions and measures related to external recovery of waste
none

Number of the contributing scenario 2
Contributing exposure scenario controlling worker exposure for
PROC 1, PROC 2, PROC 4, PROC 8a, PROC 8b, PROC 10, PROC 11, PROC 15

Further specification
Qualitative approach used to conclude safe use.
Product characteristics
Covers percentage substance in the product: >=10 %
Frequency and duration of use
8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor and outdoor use
Organisational measures to prevent /limit releases, dispersion and exposure
Regular cleaning of equipment and work area
Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Training for staff on good practice
Good standard of personal hygiene
Minimization of manual phases
Work procedures minimizing of splashes and spills
Avoidance of contact with contaminated tools and objects
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Exposure estimation and reference to its source

Environment
Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 1.11E-4 mg/l; RCR: < 0.01
Fresh Water (Sediment)	PEC: 5.86E-4 mg/kg dw; RCR: < 0.01
Marine Water (Pelagic)	PEC: 1.114E-5 mg/l; RCR: < 0.01
Marine Water (Sediment)	PEC: 5.881E-5 mg/kg dw; RCR: < 0.01
Agricultural Soil	PEC: 9.464E-6 mg/kg dw; RCR: < 0.01
Sewage Treatment Plant (Effluent)	PEC: 8.231E-4 mg/l; RCR: < 0.01

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES
Usage of relase factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:
Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Number of the ES 4

Short title of the exposure scenario
Use in Cleaning Products

List of use descriptors

Sector of uses [SU]
SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

Process categories [PROC]
PROC1: Use in closed process, no likelihood of exposure
PROC2: Use in closed, continuous process with occasional controlled exposure
PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)
PROC7: Industrial spraying
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
PROC10: Roller application or brushing
PROC13: Treatment of articles by dipping and pouring
PROC15: Use as laboratory reagent

Environmental release categories [ERC]
ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Product characteristics
Refer to attached safety data sheets

Processes and activities covered by the exposure scenario
Covers the use as a component of cleaning products including transfer from storage, pouring/unloading from drums or containers. exposures during mixing/diluting in the preparatory phase and cleaning activities (including spraying, brushing, dipping, wiping, automated and by hand), related equipment cleaning and maintenance.

Further explanations
Industrial use
Human health hazard assessment:
For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario **1**
Contributing exposure scenario controlling environmental exposure for ERC 4

Further specification

assessment tool used:, Chesar 2.2, Specific Environmental Release Categories [SPERC], release factors for (Sp)ERC were modified.
Product characteristics
Covers percentage substance in the product up to 100 % (unless stated differently).
Amounts used
Daily amount per site: 0.15 to
Annual amount per site: 3 to
Fraction of Regional tonnage used locally: 1
Environment factors not influenced by risk management
River flow rate: 18000 m³/d
Other given operational conditions affecting environmental exposure
Indoor/Outdoor use
Technical conditions and measures at process level (source) to prevent release
Release fraction to air from process: 100 %
Release fraction to wastewater from process: 1.1 %
Release fraction to soil from process: 5%
Conditions and measures related to municipal sewage treatment plant
Size of municipal sewage system/ treatment plant (m³/d): 2000
The minimum grade of elimination in the sewage plant is (%): 2000 3
Conditions and measures related to external treatment of waste for disposal
none
Conditions and measures related to external recovery of waste
none

Number of the contributing scenario 2
Contributing exposure scenario controlling worker exposure for
PROC 1, PROC 2, PROC 5, PROC 7, PROC 8a, PROC 8b, PROC 10, PROC 13, PROC 15

Further specification
Qualitative approach used to conclude safe use.
Product characteristics
Covers percentage substance in the product: >=10 %
Frequency and duration of use
8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor and outdoor use
Organisational measures to prevent /limit releases, dispersion and exposure
Regular cleaning of equipment and work area
Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Training for staff on good practice
Good standard of personal hygiene
Minimization of manual phases
Work procedures minimizing of splashes and spills
Avoidance of contact with contaminated tools and objects
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Exposure estimation and reference to its source

Environment
Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 0.082 mg/l; RCR: 0.821
Fresh Water (Sediment)	PEC: 0.435 mg/kg dw; RCR: 0.821
Marine Water (Pelagic)	PEC: 0.008 mg/l; RCR: 0.821
Marine Water (Sediment)	PEC: 0.043 mg/kg dw; RCR: < 0.01
Agricultural Soil	PEC: 0.01 mg/kg dw; RCR: 0.223
Sewage Treatment Plant (Effluent)	PEC: 0.823 mg/l; RCR: 0.019

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES
Usage of relase factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:
Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Number of the ES 5

Short title of the exposure scenario
Use as Intermediate and in Polymerisation

List of use descriptors

Sector of uses [SU]

SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites
SU10: Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

Process categories [PROC]
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)
PROC15: Use as laboratory reagent

Environmental release categories [ERC]
ERC4: Industrial use of processing aids in processes and products, not becoming part of articles
ERC6c: Industrial use of monomers for manufacture of thermoplastics
ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers

Product characteristics
Refer to attached safety data sheets

Processes and activities covered by the exposure scenario
Use as an intermediate (not related to Strictly Controlled Conditions). Includes incidental exposures during recycling/ recovery, material transfers, storage, sampling, associated laboratory activities, maintenance and loading (ncluding marine vessel/barge, road/rail car and bulk container).
Manufacture of polymers from monomers in continuous and batch processes, including sparging, discharging and reactor maintenance and immediate polymer product formation (i.e. compounding, pelletisation, product off-gassing)

Further explanations
Industrial use
Human health hazard assessment:
For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario **1**
Contributing exposure scenario controlling environmental exposure for ERC 4 ERC 6a ERC 6c

Further specification

assessment tool used:, Chesar 2.2, release factors for (Sp)ERC were modified, Specific Environmental Release Categories [SPERC].
Product characteristics
Covers percentage substance in the product up to 100 % (unless stated differently).
Amounts used
Daily amount per site: 14 to
Annual amount per site: 1400 to
Fraction of Regional tonnage used locally: 1
Environment factors not influenced by risk management
River flow rate: 18000 m³/d
Other given operational conditions affecting environmental exposure
Indoor/Outdoor use
Technical conditions and measures at process level (source) to prevent release
Release fraction to air from process: 0.02 %
Release fraction to wastewater from process: 0.012 %
Release fraction to soil from process: 0.1%

Conditions and measures related to municipal sewage treatment plant
Size of industrial sewage treatment plant (m3/d): 2000
The minimum grade of elimination in the sewage plant is (%): 0.228
Conditions and measures related to external treatment of waste for disposal
none
Conditions and measures related to external recovery of waste
none

Number of the contributing scenario 2
Contributing exposure scenario controlling worker exposure for
PROC 1, PROC 2, PROC 3, PROC 4, PROC 5, PROC 8a, PROC 8b, PROC 9, PROC 15

Further specification
Qualitative approach used to conclude safe use.
Product characteristics
Covers percentage substance in the product: >= 10 %
Frequency and duration of use
8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor and outdoor use
Organisational measures to prevent /limit releases, dispersion and exposure
Regular cleaning of equipment and work area
Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Training for staff on good practice
Good standard of personal hygiene
Minimization of manual phases
Work procedures minimizing of splashes and spills
Avoidance of contact with contaminated tools and objects
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Exposure estimation and reference to its source

Environment
Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 0.084 mg/l; RCR: 0.836
Fresh Water (Sediment)	PEC: 0.443 mg/kg dw; RCR: 0.836
Marine Water (Pelagic)	PEC: 0.008 mg/l; RCR: 0.836
Marine Water (Sediment)	PEC: 0.044 mg/kg dw; RCR: < 0.01
Agricultural Soil	PEC: 0.009 mg/kg dw; RCR: 0.182
Sewage Treatment Plant (Effluent)	PEC: 0.009 mg/l; RCR: 0.182

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES
Usage of relase factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:
Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Number of the ES 6

Short title of the exposure scenario
Use in laboratories

List of use descriptors

Sector of uses [SU]
SU3: Industrial uses: Uses of substances as such or in preparations at industrial sites

Process categories [PROC]
PROC10: Roller application or brushing
PROC15: Use as laboratory reagent

Environmental release categories [ERC]
ERC4: Industrial use of processing aids in processes and products, not becoming part of articles

Product characteristics
Refer to attached safety data sheets

Processes and activities covered by the exposure scenario
Use of small quantities within laboratory settings, including material transfers and equipment cleaning

Further explanations
Industrial use
Human health hazard assessment:
For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Number of the contributing scenario **1**
Contributing exposure scenario controlling environmental exposure for ERC 4

Further specification

assessment tool used:, Chesar 2.2, Specific Environmental Release Categories [SPERC], release factors for (Sp)ERC were modified.
Product characteristics
Covers percentage substance in the product up to 100 % (unless stated differently).
Amounts used
Daily amount per site: 0.002 to
Annual amount per site: 0.05 to
Fraction of Regional tonnage used locally: 1
Environment factors not influenced by risk management
River flow rate: 18000 m³/d
Other given operational conditions affecting environmental exposure
Indoor/Outdoor use
Technical conditions and measures at process level (source) to prevent release
Release fraction to air from process: 100 %
Release fraction to wastewater from process: 50 %
Release fraction to soil from process: 5%
Organisational measures to prevent/limit release from site
none
Conditions and measures related to municipal sewage treatment plant
Size of industrial sewage treatment plant (m3/d): 2000
The minimum grade of elimination in the sewage plant is (%): 2000 3
Conditions and measures related to external treatment of waste for disposal
none
Conditions and measures related to external recovery of waste
none

Number of the contributing scenario **2**
Contributing exposure scenario controlling worker exposure for PROC 10, PROC 15

Further specification
Qualitative approach used to conclude safe use.
Product characteristics
Covers percentage substance in the product: >=10 %
Frequency and duration of use
8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor and outdoor use
Organisational measures to prevent /limit releases, dispersion and exposure
Regular cleaning of equipment and work area
Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Training for staff on good practice
Good standard of personal hygiene
Minimization of manual phases
Work procedures minimizing of splashes and spills
Avoidance of contact with contaminated tools and objects
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Exposure estimation and reference to its source

Environment
Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 0.062 mg/l; RCR: 0.622
Fresh Water (Sediment)	PEC: 0.33 mg/kg dw; RCR: 0.622
Marine Water (Pelagic)	PEC: 0.006 mg/l; RCR: 0.622
Marine Water (Sediment)	PEC: 0.039 mg/kg dw; RCR: < 0.01
Agricultural Soil	PEC: 0.006 mg/kg dw; RCR: 0.133
Sewage Treatment Plant (Effluent)	PEC: 0.624 mg/l; RCR: 0.014

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES
Usage of relase factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:
Should consumer uses be associated with this exposure scenario, please contact OQ for further details

Number of the ES 7

Short title of the exposure scenario
Use in laboratories

List of use descriptors

Sector of uses [SU]
SU22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)

Process categories [PROC]
PROC10: Roller application or brushing
PROC15: Use as laboratory reagent

Environmental release categories [ERC]

ERC8a: Wide dispersive indoor use of processing aids in open systems

Product characteristics
Refer to attached safety data sheets

Processes and activities covered by the exposure scenario
Use of small quantities within laboratory settings, including material transfers and equipment cleaning

Further explanations
Professional use
Human health hazard assessment:
For concentrations below 10 %, the mixture is not hazardous with respect to the substance, no RMM/OCs are necessary

Contributing Scenarios

Number of the contributing scenario **1**
Contributing exposure scenario controlling environmental exposure for ERC 8a

Further specification

assessment tool used:, Chesar 2.2.
Product characteristics
Covers percentage substance in the product up to 100 % (unless stated differently).
Amounts used
Daily amount per site: <= 2.75E-7 to
Fraction of EU tonnage used in region: 0.1
Environment factors not influenced by risk management
River flow rate: 18000 m³/d
Other given operational conditions affecting environmental exposure
Indoor/Outdoor use
Technical conditions and measures at process level (source) to prevent release
Release fraction to air from process: 100 %
Release fraction to wastewater from process: 100 %
Release fraction to soil from process: 0%
Conditions and measures related to municipal sewage treatment plant
Size of municipal sewage system/ treatment plant (m³/d): 2000
The minimum grade of elimination in the sewage plant is (%): 0.228
Conditions and measures related to external treatment of waste for disposal
none
Conditions and measures related to external recovery of waste
none

Number of the contributing scenario **2**
Contributing exposure scenario controlling worker exposure for PROC 10, PROC 15

Further specification
Qualitative approach used to conclude safe use.
Product characteristics
Covers percentage substance in the product: >=10 %
Frequency and duration of use
8 h (full shift)
Other given operational conditions affecting workers exposure
Indoor and outdoor use
Organisational measures to prevent /limit releases, dispersion and exposure
Regular cleaning of equipment and work area
Supervision in place to check that the RMMs in place are being used correctly and OCs followed.
Training for staff on good practice
Good standard of personal hygiene

Minimization of manual phases
Work procedures minimizing of splashes and spills
Avoidance of contact with contaminated tools and objects
Conditions and measures related to personal protection, hygiene and health evaluation
Wear suitable gloves (tested to EN374) and eye protection. Full skin coverage with appropriate light-weight barrier material.

Exposure estimation and reference to its source

Environment
Environment PEC = predicted environmental concentration (local); RCR = risk characterisation ratio

Fresh Water (Pelagic)	PEC: 4.237 mg/l; RCR: < 0.01
Fresh Water (Sediment)	PEC: 2.238E-4 mg/kg dw; RCR: < 0.01
Marine Water (Pelagic)	PEC: 4.278E-6 mg/l; RCR: < 0.01
Marine Water (Sediment)	PEC: 2.259E-5 mg/kg dw; RCR: < 0.01
Agricultural Soil	PEC: 2.629E-6 mg/kg dw; RCR: < 0.01
Sewage Treatment Plant (Effluent)	PEC: 1.372E-4 mg/l; RCR: < 0.01

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES
Usage of relase factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:
Should consumer uses be associated with this exposure scenario, please contact OQ for further details

List of use descriptors

Guidance to Downstream User to evaluate whether he works inside the boundaries set by the ES
Usage of relase factors allows downstream users to verify in a first approximation, if the combination of local usage and production conditions meets the defined release quantities resulting from this exposure scenario (calculated as M(site) [see amounts used, contributing scenario 1] x release factor [Technical conditions and measures at process level (source) to prevent release; contributing scenario 1])

associated uses:
Should consumer uses be associated with this exposure scenario, please contact OQ for further details