

GENAMINOX CSL

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Substance key: SXR110449

Revision Date: 18.07.2019

Version : 8 - 4 / EU

Date of printing : 20.07.2019

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

1.1. Product identifier

Trade name

GENAMINOX CSL

Material number: 136115

Chemical nature: Coco alkyldimethyl amine oxide (former CAS-No. 68955-55-5)
(30%) in aqueous solution

INCI name: Cocoamine Oxide

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

Exposure scenarios: see annex

1.3. Details of the supplier of the safety data sheet

Identification of the company

Clariant Produkte (Deutschland) GmbH
65926 Frankfurt am Main
Telephone no. : +49 69 305 18000

Information about the substance/mixture

BU Industrial & Consumer Specialties
Product Stewardship
e-mail: SDS.Europe@clariant.com

1.4. Emergency telephone number

00800-5121 5121 (24 h)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2

H315: Causes skin irritation.

Serious eye damage, Category 1

H318: Causes serious eye damage.

Short-term (acute) aquatic hazard,
Category 1

H400: Very toxic to aquatic life.

Long-term (chronic) aquatic hazard,
Category 2

H411: Toxic to aquatic life with long lasting effects.

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

:



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Signal word	:	Danger
Hazard statements	:	H315 Causes skin irritation. H318 Causes serious eye damage. H410 Very toxic to aquatic life with long lasting effects.
Precautionary statements	:	Prevention: P264 Wash skin thoroughly after handling. P273 Avoid release to the environment. P280 Wear protective gloves/ eye protection/ face protection. Response: P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. P391 Collect spillage. Disposal: P501 Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

Amines, C12-18(even numbered)-alkyldimethyl, N-oxides

2.3 Other hazards

Taking into account all available toxicity and ecotoxicity data, it can be concluded that the ingredients of the mixture described here do not fulfil the criteria to be classified as either PBT or vPvB.

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.

No additional hazards are known except those derived from the labelling.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Components

Chemical name	CAS-No. EC-No. Index-No. Registration number	Classification	Concentration (% w/w)
Amines, C12-18(even numbered)-alkyldimethyl, N-oxides	Not Assigned 01-2119489396-21-0001	Acute Tox. 4; H302 Skin Irrit. 2; H315 Eye Dam. 1; H318 Aquatic Acute 1; H400 Aquatic Chronic 2; H411 M-Factor (Acute	>= 30 - < 50

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		aquatic toxicity): 1	
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For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

- General advice : Remove/Take off immediately all contaminated clothing.
- In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.
- In case of eye contact : In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

4.2 Most important symptoms and effects, both acute and delayed

- Symptoms : No symptoms known currently.
- Risks : No hazards known at this time.

4.3 Indication of any immediate medical attention and special treatment needed

- Treatment : Treat symptomatically.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media : Water spray jet
Foam
Carbon dioxide (CO₂)
Dry powder
- Unsuitable extinguishing media : High volume water jet

5.2 Special hazards arising from the substance or mixture

- Specific hazards during firefighting : In case of fires, hazardous combustion gases are formed:
Carbon monoxide (CO)
Nitrogen oxides (NO_x)

5.3 Advice for firefighters

- Special protective equipment for firefighters : Self-contained breathing apparatus

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions : Wear suitable protective clothing.

6.2 Environmental precautions

Environmental precautions : Do not allow to enter drains or waterways

6.3 Methods and material for containment and cleaning up

Methods for cleaning up : Pick up with absorbent material (eg sand, sawdust). Rinse away rest with water

6.4 Reference to other sections

Information regarding Safe handling, see chapter 7., For personal protection see section 8., For disposal considerations see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on safe handling : Handle and open container with care.

Advice on protection against fire and explosion : Observe the general rules of industrial fire protection

Hygiene measures : Wash hands before breaks and at the end of workday. Use protective skin cream before handling the product. Take off immediately all contaminated clothing and wash it before reuse.

7.2 Conditions for safe storage, including any incompatibilities

Further information on storage conditions : - sensitive to frost - In case of the product becoming opaque, thickening or being frozen due to the effects of cold, allow to thaw slowly at room temperature. Stir briefly before use.

7.3 Specific end use(s)

Specific use(s) : No further recommendations.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

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

Substance name	End Use	Exposure routes	Potential health effects	Value
Amines, C12-18(even numbered)-	Workers	Dermal	Long-term systemic effects	11 mg/kg bw/day

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alkyldimethyl, N-oxides				
Remarks:	DNEL			
	Workers	Inhalation	Long-term systemic effects	15,5 mg/m3
Remarks:	DNEL			
	Workers	Dermal	Long-term local effects	0,27 % in mixture (by weight)
Remarks:	DNEL			
	General population	Dermal	Long-term systemic effects	5,5 mg/kg bw/day
Remarks:	DNEL			
	General population	Inhalation	Long-term systemic effects	3,8 mg/m3
Remarks:	DNEL			
	General population	Oral	Long-term systemic effects	0,44 mg/kg bw/day
Remarks:	DNEL			
	General population	Dermal	Long-term local effects	0,27 % in mixture (by weight)
Remarks:	DNEL			

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

Substance name	Environmental Compartment	Value
Amines, C12-18(even numbered)-alkyldimethyl, N-oxides	Fresh water	0,0335 mg/l
	salt water	0,00335 mg/l
	Water (intermittent release)	0,0335 mg/l
	Fresh water sediment	5,24 mg/kg dry weight (d.w.)
	Marine sediment	0,524 mg/kg dry weight (d.w.)
	Soil	1,02 mg/kg dry weight (d.w.)
	Sewage treatment plant	24 mg/l
	Oral	11,1 mg/kg food

8.2 Exposure controls

Engineering measures

Local ventilation recommended - mechanical ventilation may be used.

Personal protective equipment

Eye protection : Safety glasses

Hand protection

Break through time : 480 min

Glove thickness : 0,7 mm

Remarks : Long-term exposure Impervious butyl rubber gloves

Break through time : 30 min

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- Glove thickness : 0,4 mm
- Remarks : For short-term exposure (splash protection): Nitrile rubber gloves.
- Remarks : These types of protective gloves are offered by various manufacturers. Please note the manufacturers' detailed statements, especially about the minimum thickness and the minimum breakthrough time. Consider also the particular working conditions under which the gloves are being used.
- Protective measures : Avoid contact with skin.
Avoid contact with eyes.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance : Liquid
- Colour : colourless
- Odour : odourless
- Odour Threshold : not tested.
- pH : 6 - 8 (20 °C)
Concentration: 10 g/l
- Melting point : not determined
- Boiling point : approx. 100 °C
Based on water-content.
- Flash point : > 100 °C
Method: DIN/ISO 2592 (open cup)
- Evaporation rate : not tested.
- Flammability (solid, gas) : Not applicable
- Burning number : Not applicable
- Upper explosion limit / upper flammability limit : not tested.
- Lower explosion limit / Lower flammability limit : not tested.
- Vapour pressure : not tested.
- Relative vapour density : not tested.
- Density : approx. 0,97 g/cm³ (20 °C)
Method: DIN 51757

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Bulk density	:	Not applicable
Solubility(ies)	:	
Water solubility	:	soluble (20 °C)
Solubility in other solvents	:	not tested. Solvent: fat
Auto-ignition temperature	:	Not applicable
Decomposition temperature	:	> 150 °C Heating rate: 3 K/min Decomposition energy (mass): 200 kJ/kg Method: DTA Exothermic reaction
Viscosity	:	
Viscosity, kinematic	:	not tested.
Explosive properties	:	Not explosive Information refers to the main component.
Oxidizing properties	:	not oxidizing Information refers to the main component.

9.2 Other information

Minimum ignition energy	:	not tested.
Particle size	:	Not applicable
Self-ignition	:	The substance or mixture is not classified as self heating.

SECTION 10: Stability and reactivity

10.1 Reactivity

See section 10.3. "Possibility of hazardous reactions"

10.2 Chemical stability

Stable under normal conditions.

10.3 Possibility of hazardous reactions

Hazardous reactions : No dangerous reaction known under conditions of normal use.

10.4 Conditions to avoid

Conditions to avoid : Keep away from heat.
Keep away from open flames, hot surfaces and sources of ignition.

10.5 Incompatible materials

Materials to avoid : not known

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10.6 Hazardous decomposition products

When handled and stored appropriately, no dangerous decomposition products are known

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product:

Acute oral toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity : Remarks: no data available

Acute dermal toxicity : LD50 (Rat, male and female): > 2.000 mg/kg
Method: OECD Test Guideline 402

Components:

Amines, C12-18(even numbered)-alkyldimethyl, N-oxides:

Acute oral toxicity : LD50 (Rat, male and female): 846 - 1.236 mg/kg
Method: OECD Test Guideline 401
Test substance: anhydrous substance
GLP: yes

Skin corrosion/irritation

Product:

Species : Rabbit
Method : OECD Test Guideline 404
Result : irritating

Serious eye damage/eye irritation

Product:

Species : rabbit eye
Method : OECD Test Guideline 405
Result : Risk of serious damage to eyes.
Remarks : Test conducted with a similar formulation.

Respiratory or skin sensitisation

Product:

Test Type : Buehler Test
Species : Guinea pig
Method : OECD Test Guideline 406
Result : non-sensitizing

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Germ cell mutagenicity

Product:

Genotoxicity in vitro : Test Type: Ames test
Method: OECD Test Guideline 471
Result: negative

Test Type: HGPRT assay
Method: OECD Test Guideline 476
Result: negative

Germ cell mutagenicity-
Assessment : It is concluded that the product is not mutagenic based on
evaluation of several mutagenicity tests.

Carcinogenicity

Product:

Carcinogenicity -
Assessment : No information available.

Reproductive toxicity

Product:

Reproductive toxicity -
Assessment : No reproductive toxicity to be expected.

No indications of toxic effects were observed in reproduction
studies in animals.

STOT - single exposure

Product:

Remarks : no data available

STOT - repeated exposure

Product:

Remarks : no data available

Repeated dose toxicity

Product:

Species : Rat, male and female
NOAEL : 88 mg/kg
Application Route : oral (feed)
Method : OECD Test Guideline 408

Aspiration toxicity

Product:

no data available

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Further information

Product:

Remarks : The classification was made by the conventional (calculation) method of the CLP Regulation (EC) No 1272/2008. Information refers to the main component.

SECTION 12: Ecological information

12.1 Toxicity

Product:

Toxicity to fish : LC50 (Danio rerio (zebra fish)): 5 mg/l
Exposure time: 96 h
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 8 mg/l
Exposure time: 48 h
Method: OECD Test Guideline 202

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): 0,8 mg/l
End point: Growth rate
Exposure time: 72 h
Method: OECD Test Guideline 201

Toxicity to microorganisms : EC10 (Pseudomonas putida): 80 mg/l
End point: Bacteria toxicity (growth inhibition)
Remarks: The details of the toxic effect relate to the nominal concentration.
Test conducted with a similar formulation.

Components:

Amines, C12-18(even numbered)-alkyldimethyl, N-oxides:

M-Factor (Acute aquatic toxicity) : 1

12.2 Persistence and degradability

Product:

Biodegradability : Biodegradation: 85 %
Exposure time: 28 d
Method: OECD Test Guideline 301B
Remarks: Readily biodegradable, according to appropriate OECD test.

Chemical Oxygen Demand (COD) : 784 mg/g

Dissolved organic carbon (DOC) : 238 mg/g

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Components:

Amines, C12-18(even numbered)-alkyldimethyl, N-oxides:

Biodegradability : Test Type: aerobic
Inoculum: Other
Concentration: 15,7 mg/l TOC
Result: Readily biodegradable.
Biodegradation: 80 %
Related to: TOC
Exposure time: 28 d
Method: OPPTS 835.3120 (ISO/DIS-14593)
GLP: yes

12.3 Bioaccumulative potential

Product:

Bioaccumulation : Remarks: No bioaccumulation is to be expected (log Pow <= 4).

12.4 Mobility in soil

Product:

Distribution among environmental compartments : Remarks: no data available

12.5 Results of PBT and vPvB assessment

Product:

Assessment : Taking into account all available toxicity and ecotoxicity data, it can be concluded that the ingredients of the mixture described here do not fulfil the criteria to be classified as either PBT or vPvB..
: 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 Other adverse effects

Product:

Additional ecological information : no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product : In accordance with local authority regulations, take to special waste incineration plant
Contaminated packaging : Packaging that cannot be cleaned should be disposed of as product waste

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SECTION 14: Transport information

Section 14.1. to 14.5.

ADR

UN no.	UN 3082
Proper shipping name:	Environmentally hazardous substance, liquid, n.o.s.
Hazard inducer(s):	Amines, C12-18-alkyldimethyl, N-oxides
Class:	9
Primary risk:	9
Packing group:	III
Hazard no. :	90
Remarks	Shipment permitted

ADN

UN no.	UN 3082
Proper shipping name:	Environmentally hazardous substance, liquid, n.o.s.
Hazard inducer(s):	Amines, C12-18-alkyldimethyl, N-oxides
Class:	9
Primary risk:	9
Packing group:	III
Remarks	Shipment permitted

RID

UN no.	UN 3082
Proper shipping name:	Environmentally hazardous substance, liquid, n.o.s.
Hazard inducer(s):	Amines, C12-18-alkyldimethyl, N-oxides
Class:	9
Primary risk:	9
Packing group:	III
Hazard no. :	90
Remarks	Shipment permitted

IATA

UN no.	UN 3082
Proper shipping name:	Environmentally hazardous substance, liquid, n.o.s.
Hazard inducer(s):	Amines, C12-18-alkyldimethyl, N-oxides
Class:	9
Primary risk:	9
Packing group:	III
Remarks	Shipment permitted

IMDG

UN no.	UN 3082
Proper shipping name:	Environmentally hazardous substance, liquid, n.o.s.
Hazard inducer(s):	Amines, C12-18-alkyldimethyl, N-oxides
Class:	9
Primary risk:	9
Packing group:	III
Remarks	Shipment permitted
Marine pollutant:	Marine Pollutant
EmS :	F-A S-F

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14.6. Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code (International Bulk Chemicals Code)

No transport as bulk according IBC - Code.

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59) : Not applicable

REACH - List of substances subject to authorisation (Annex XIV) : Not applicable

Regulation (EC) No 1005/2009 on substances that deplete the ozone layer : Not applicable

Regulation (EC) No 850/2004 on persistent organic pollutants : Not applicable

Other regulations:

The surfactant(s) contained in this mixture complies(comply) with the biodegradability criteria as laid down in Regulation (EC) No.648/2004 on detergents. Data to support this assertion are held at the disposal of the competent authorities of the Member States and will be made available to them, at their direct request or at the request of a detergent manufacturer.

15.2 Chemical safety assessment

Chemical Safety Assessments have been carried out for these substances.

SECTION 16: Other information

Full text of H-Statements

H302 : Harmful if swallowed.
H315 : Causes skin irritation.
H318 : Causes serious eye damage.
H400 : Very toxic to aquatic life.
H411 : Toxic to aquatic life with long lasting effects.

Full text of other abbreviations

Acute Tox. : Acute toxicity
Aquatic Acute : Short-term (acute) aquatic hazard
Aquatic Chronic : Long-term (chronic) aquatic hazard
Eye Dam. : Serious eye damage
Skin Irrit. : Skin irritation

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

Further information

Other information : Observe national and local legal requirements

Classification of the mixture:

Skin Irrit. 2	H315
Eye Dam. 1	H318
Aquatic Acute 1	H400
Aquatic Chronic 2	H411

Classification procedure:

Based on product data or assessment
Based on product data or assessment
Based on product data or assessment
Calculation method

This information corresponds to the present state of our knowledge and is intended as a general description of our products and their possible applications. Clariant makes no warranties, express or implied, as to the information's accuracy, adequacy, sufficiency or freedom from defect and assumes no liability in connection with any use of this information. Any user of this product is responsible for determining the suitability of Clariant's products for its particular application. Nothing included in this information waives any of Clariant's General Terms and Conditions of Sale, which control unless it agrees otherwise in writing. Any existing intellectual/industrial property rights must be observed. Due to possible changes in our products and applicable

SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006



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national and international regulations and laws, the status of our products could change. Material Safety Data Sheets providing safety precautions, that should be observed when handling or storing Clariant products, are available upon request and are provided in compliance with applicable law. You should obtain and review the applicable Material Safety Data Sheet information before handling any of these products. For additional information, please contact Clariant.

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Exposure scenario

Number	Title
ES 1	Formulation or re-packing; Formulation & (re)packing of substances and mixtures SU10 - PC35, PC21, PC31, PC39, PC25, PC37 - PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15 - ERC2 Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides
ES 2	Industrial use, Professional use; Wide dispersive use, Detergent, Industrial use of laundry products, Professional use of laundry products PC21, PC31, PC35, PC39 - PROC1, PROC2, PROC8a, PROC8b, PROC11 - ERC8a Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides
ES 3	Professional use; Wide dispersive use, Detergent, Professional use of dishwashing products PC21, PC31, PC35, PC39 - PROC1, PROC2, PROC8a, PROC8b, PROC10 - ERC8a Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides
ES 4	Professional use; Wide dispersive use, Detergent, Professional use of general surface cleaning products PC21, PC31, PC35, PC39 - PROC8a, PROC10, PROC11, PROC13 - ERC8a Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides
ES 5	Professional use; Wide dispersive use, Detergent, Professional use of floor care products PC21, PC31, PC35, PC39 - PROC8a, PROC10, PROC11 - ERC8a Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides
ES 6	Professional use; Wide dispersive use, Detergent, Professional use of maintenance products PC21, PC31, PC35, PC39 - PROC2, PROC8a, PROC10, PROC11 - ERC8a Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides
ES 7	Professional use; Wide dispersive use, Detergent, Professional use of vehicle cleaning products PC21, PC31, PC35, PC39 - PROC4, PROC8a, PROC10, PROC11 - ERC8a Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides
ES 8	Professional use; Wide dispersive use, Detergent, Professional use of food beverage and pharmaceutical products PC21, PC31, PC35, PC39 - PROC8a, PROC10 - ERC8a Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides
ES 9	Professional use; Wide dispersive use, Detergent, Professional use of medical devices PC21, PC31, PC35, PC39 - PROC4, PROC8a, PROC10, PROC11, PROC13 - ERC8a Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides
ES 10	Professional use; Wide dispersive use, Detergent, Professional use of

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hand cleaners

PC21, PC31, PC35, PC39 - PROC19 - ERC8a

Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides

ES 11 Industrial use; Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Detergent, Industrial use of laundry products

PC25, PC35, PC37 - PROC2, PROC8b - ERC4, ERC5

Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides

ES 12 Industrial use; Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Detergent, Industrial use of vehicle cleaning products

PC25, PC35, PC37 - PROC4, PROC7, PROC8a, PROC10 - ERC4, ERC5

Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides

ES 13 Industrial use; Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Detergent, Industrial use of food beverage and pharmaceutical products

PC25, PC35, PC37 - PROC1, PROC4, PROC7, PROC8a, PROC8b, PROC10 - ERC4, ERC5

Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides

ES 14 Industrial use; Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Detergent, Industrial use of façade/surface cleaning products

PC25, PC35, PC37 - PROC7, PROC8a - ERC4, ERC5

Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides

ES 15 Industrial use; Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Detergent, Industrial use of water treatment products

PC25, PC35, PC37 - PROC4, PROC8a, PROC8b - ERC4, ERC5

Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides

ES 16 Industrial use; Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Detergent, Industrial use of metal treatment products

PC25, PC35, PC37 - PROC2, PROC4, PROC8a, PROC8b, PROC10, PROC17 - ERC4, ERC5

Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides

ES 17 Consumer use; Wide dispersive use, Laundry products

PC35, PC39 - ERC8a

Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides

ES 18 Consumer use; Wide dispersive use, Hand dishwashing liquids, Machine dishwashing products

PC35, PC39 - ERC8a

Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides

ES 19 Consumer use; Wide dispersive use, All purpose cleaners

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	PC35, PC39 - ERC8a Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides
ES 20	Consumer use; Wide dispersive use, Sanitary products PC35, PC39 - ERC8a Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides
ES 21	Consumer use; Wide dispersive use, Floor cleaning products PC35, PC39 - ERC8a Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides
ES 22	Consumer use; Wide dispersive use, Oven cleaners PC35, PC39 - ERC8a Amines, C12-18 (even numbered)-alkyldimethyl, N-oxides

1. ES 1: Formulation or re-packing; Formulation & (re)packing of substances and mixtures; SU10

1.1. Title section

Formulation [mixing] of preparations and/or re-packaging (SU10)	
Washing and cleaning products (PC35)	
Laboratory chemicals (PC21)	
Polishes and wax blends (PC31)	
Cosmetics, personal care products (PC39)	
Metal working fluids (PC25)	
Water treatment chemicals (PC37)	
Environment	
CS1: Formulation into mixture (Formulation into mixture)	ERC2
Workers	
CS2: Formulation into mixture (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions)	PROC1
CS3: Formulation into mixture (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions)	PROC2
CS4: Formulation into mixture (Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition)	PROC3
CS5: Formulation into mixture (Chemical production where opportunity for exposure arises)	PROC4
CS6: Formulation into mixture (Mixing or blending in batch processes)	PROC5
CS7: Formulation into mixture (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)	PROC8a
CS8: Formulation into mixture (Transfer of substance or mixture (charging/discharging) at dedicated facilities)	PROC8b
CS9: Formulation into mixture (Transfer of substance or mixture into small containers (dedicated filling line, including weighing))	PROC9
CS10: Formulation into mixture (Tabletting, compression, extrusion,	PROC14

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pelettisation, granulation)

CS11: Formulation into mixture (Use as laboratory reagent)

PROC15

1.2. ES 1 Conditions of use affecting exposure

1.2.1 ES 1 - CS 1: Control of environmental exposure: Formulation into mixture (Formulation into mixture) (ERC2)

Remarks : AISE SPERC 2.1.j.v1
COLIPA SPERC 2.1.a.v1
Large scale
AISE SPERC 2.1.k.v1
COLIPA SPERC 2.1.b.v1
Medium scale
AISE SPERC 2.1.l.v1
COLIPA SPERC 2.1.c.v1
Small scale

Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use
Amounts used : 16700 kg/day
Remarks : Large scale
: 4500 kg/day
Remarks : Medium scale
: 10 kg/day
Remarks : Small scale

Frequency and duration of use

Continuous exposure : 220 times per year, Large scale, Medium scale
Continuous exposure : 20 times per year, Small scale

Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m³/d
water
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment : 2.000 m³/d
plant effluent
Sludge Treatment : partially, anaerobic

Waste management measures

Waste treatment : Recycling possible.

Conditions and measures related to external recovery of waste

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Recovery Methods : Not applicable

1.2.2 ES 1 - CS 2: Control of worker exposure: Formulation into mixture (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions) (PROC1)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 30 %
solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h

Frequency of use : 1 uses per day

Remarks : Closed systems, Batch process

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal

Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : >= 90 %

Note : Loading

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : Handle substance within a closed system.
or
Batch process
Use in contained systems
Recycling

1.2.3 ES 1 - CS 3: Control of worker exposure: Formulation into mixture (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 30 %
solution

Physical Form (at time of use) : Liquid

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Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day
Remarks : Closed systems, Batch process

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : >= 90 %

Note : Loading

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : Handle substance within a closed system.
or
Batch process
Use in contained systems
Recycling

1.2.4 ES 1 - CS 4: Control of worker exposure: Formulation into mixture (Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition) (PROC3)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 30 %
solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day
Remarks : Closed systems, Batch process

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : $\geq 90\%$
Note : Loading
Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Handle substance within a closed system.
or
Batch process
Use in contained systems
Recycling

1.2.5 ES 1 - CS 5: Control of worker exposure: Formulation into mixture (Chemical production where opportunity for exposure arises) (PROC4)

Product characteristics

Concentration of the Substance in Mixture/Article : $\leq 30\%$
solution
Physical Form (at time of use) : Liquid
Vapour pressure : $< 0,000022$ Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : ≤ 8 h
Frequency of use : 1 uses per day
Remarks : Closed systems, Batch process

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : $\geq 90\%$
Note : Loading
Organisational measures to : Ensure operatives are trained to minimise exposures.

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prevent /limit releases, dispersion and exposure
Technical conditions and measures : Ensure regular inspection, cleaning and maintenance of equipment and machines.
: Handle substance within a closed system.
or
Batch process
Use in contained systems
Recycling

1.2.6 ES 1 - CS 6: Control of worker exposure: Formulation into mixture (Mixing or blending in batch processes) (PROC5)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 30 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day
Remarks : Closed systems, Batch process

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %
Note : Loading
Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Handle substance within a closed system.
or
Batch process
Use in contained systems
Recycling

1.2.7 ES 1 - CS 7: Control of worker exposure: Formulation into mixture (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in : <= 30 %

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Mixture/Article : solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h

Frequency of use : 1 uses per day

Remarks : Closed systems, Batch process

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal

Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : >= 90 %

Note : Loading

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : Handle substance within a closed system.
or
Batch process
Use in contained systems
Recycling

1.2.8 ES 1 - CS 8: Control of worker exposure: Formulation into mixture (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 30 %
solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h

Frequency of use : 1 uses per day

Remarks : Closed systems, Batch process

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and

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forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %
Note : Loading

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Handle substance within a closed system.
or
Batch process
Use in contained systems
Recycling

1.2.9 ES 1 - CS 9: Control of worker exposure: Formulation into mixture (Transfer of substance or mixture into small containers (dedicated filling line, including weighing)) (PROC9)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 30 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day
Remarks : Closed systems, Batch process

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %

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Note : Loading

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : Handle substance within a closed system.
or
Batch process
Use in contained systems
Recycling

1.2.10 ES 1 - CS 10: Control of worker exposure: Formulation into mixture (Tabletting, compression, extrusion, pelettisation, granulation) (PROC14)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 30 %
solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h

Frequency of use : 1 uses per day

Remarks : Closed systems, Batch process

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal

Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : >= 10 %

Note : Loading

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : Handle substance within a closed system.
or
Batch process
Use in contained systems
Recycling

1.2.11 ES 1 - CS 11: Control of worker exposure: Formulation into mixture (Use as laboratory reagent) (PROC15)

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Product characteristics

Concentration of the Substance in Mixture/Article : <= 30 %
solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h

Frequency of use : 1 uses per day

Remarks : Closed systems, Batch process

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal

Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : >= 90 %

Note : Loading

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : Handle substance within a closed system.
or
Batch process
Use in contained systems
Recycling

1.3. ES 1 Exposure estimation and reference to its source

1.3.1 ES 1 - CS 1: Environmental release and exposure: Formulation into mixture (Formulation into mixture) (ERC2)

Release route	Release rate	Release estimation method
Air	0 kg/day	AISE SPERC 2.1.j.v1, COLIPA SPERC 2.1.a.v1, Large scale, AISE SPERC 2.1.k.v1, COLIPA SPERC 2.1.b.v1, Medium scale, AISE SPERC 2.1.l.v1, COLIPA SPERC 2.1.c.v1, Small scale
Water	16,7 kg/day	AISE SPERC 2.1.j.v1, COLIPA SPERC

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Water	9 kg/day	2.1.a.v1, Large scale AISE SPERC 2.1.k.v1, COLIPA SPERC 2.1.b.v1, Medium scale
Water	0,04 kg/day	AISE SPERC 2.1.l.v1, COLIPA SPERC 2.1.c.v1, Small scale

protection target	Exposure estimation and reference to its source (EUSES)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,00178 mg/L (AISE SPERC 2.1.j.v1, COLIPA SPERC 2.1.a.v1, Large scale)	0,000074
Freshwater	0,000178 mg/L (AISE SPERC 2.1.j.v1, COLIPA SPERC 2.1.a.v1, Large scale)	0,0053
Freshwater sediment	0,028 mg/kg dry weight (AISE SPERC 2.1.j.v1, COLIPA SPERC 2.1.a.v1, Large scale)	0,0053
Soil	0,015 mg/kg dry weight (AISE SPERC 2.1.j.v1, COLIPA SPERC 2.1.a.v1, Large scale)	0,0147
Marine water	0,0000178 mg/L (AISE SPERC 2.1.j.v1, COLIPA SPERC 2.1.a.v1, Large scale)	0,0053
Marine sediment	0,0028 mg/kg dry weight (AISE SPERC 2.1.j.v1, COLIPA SPERC 2.1.a.v1, Large scale)	0,0053
Sewage treatment plant	0,0048 mg/L (AISE SPERC 2.1.k.v1, COLIPA SPERC 2.1.b.v1, Medium scale)	0,0002
Freshwater	0,000479 mg/L (AISE SPERC 2.1.k.v1, COLIPA SPERC 2.1.b.v1, Medium scale)	0,0143
Freshwater sediment	0,075 mg/kg dry weight (AISE SPERC 2.1.k.v1, COLIPA SPERC 2.1.b.v1, Medium scale)	0,0143
Soil	0,041 mg/kg dry weight (AISE SPERC 2.1.k.v1, COLIPA SPERC 2.1.b.v1, Medium scale)	0,0396
Marine water	0,0000479 mg/L (AISE SPERC 2.1.k.v1, COLIPA SPERC 2.1.b.v1, Medium scale)	0,0143
Marine sediment	0,0075 mg/kg dry weight (AISE SPERC 2.1.k.v1, COLIPA SPERC 2.1.b.v1, Medium scale)	0,0143
Sewage treatment plant	0,0000213 mg/L (AISE SPERC 2.1.l.v1, COLIPA SPERC 2.1.c.v1, Small scale)	< 0,01
Freshwater	< 0,00001 mg/L (AISE SPERC 2.1.l.v1, COLIPA SPERC 2.1.c.v1, Small scale)	< 0,01
Freshwater sediment	0,00034 mg/kg dry weight (AISE SPERC 2.1.l.v1, COLIPA SPERC 2.1.c.v1, Small scale)	< 0,01
Soil	0,00018 mg/kg dry weight (AISE SPERC 2.1.l.v1, COLIPA SPERC 2.1.c.v1, Small scale)	0,000176
Marine water	< 0,00001 mg/L (AISE SPERC 2.1.l.v1, COLIPA SPERC 2.1.c.v1, Small scale)	< 0,01
Marine sediment	< 0,00001 mg/kg dry weight (AISE SPERC 2.1.l.v1, COLIPA SPERC 2.1.c.v1, Small scale)	< 0,01

1.3.2 ES 1 - CS 2: Worker exposure: Formulation into mixture (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions) (PROC1)

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Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,010 mg/kg bw/day (ECETOC TRA worker v2.0)	0,001
combined routes		0,001

1.3.3 ES 1 - CS 3: Worker exposure: Formulation into mixture (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,041 mg/kg bw/day (ECETOC TRA worker v2.0)	0,004
combined routes		0,004

1.3.4 ES 1 - CS 4: Worker exposure: Formulation into mixture (Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition) (PROC3)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,010 mg/kg bw/day (ECETOC TRA worker v2.0)	0,001
combined routes		0,001

1.3.5 ES 1 - CS 5: Worker exposure: Formulation into mixture (Chemical production where opportunity for exposure arises) (PROC4)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,206 mg/kg bw/day (ECETOC TRA worker v2.0)	0,019
combined routes		0,019

1.3.6 ES 1 - CS 6: Worker exposure: Formulation into mixture (Mixing or blending in batch processes) (PROC5)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0

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	vapour pressure.)	
dermal	0,411 mg/kg bw/day (ECETOC TRA worker v2.0)	0,038
combined routes		0,038

1.3.7 ES 1 - CS 7: Worker exposure: Formulation into mixture (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,411 mg/kg bw/day (ECETOC TRA worker v2.0)	0,038
combined routes		0,038

1.3.8 ES 1 - CS 8: Worker exposure: Formulation into mixture (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,206 mg/kg bw/day (ECETOC TRA worker v2.0)	0,019
combined routes		0,019

1.3.9 ES 1 - CS 9: Worker exposure: Formulation into mixture (Transfer of substance or mixture into small containers (dedicated filling line, including weighing)) (PROC9)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,206 mg/kg bw/day (ECETOC TRA worker v2.0)	0,019
combined routes		0,019

1.3.10 ES 1 - CS 10: Worker exposure: Formulation into mixture (Tabletting, compression, extrusion, pelettisation, granulation) (PROC14)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,103 mg/kg bw/day (ECETOC TRA worker v2.0)	0,009
combined routes		0,009

1.3.11 ES 1 - CS 11: Worker exposure: Formulation into mixture (Use as laboratory

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reagent) (PROC15)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,010 mg/kg bw/day (ECETOC TRA worker v2.0)	0,0009
combined routes		0,0009

1.4. ES 1 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users

Section 2

Further details on scaling and control technologies are provided in SPERC factsheet.

2. ES 2: Industrial use, Professional use; Wide dispersive use, Detergent, Industrial use of laundry products, Professional use of laundry products

2.1. Title section

Laboratory chemicals (PC21)		
Polishes and wax blends (PC31)		
Washing and cleaning products (PC35)		
Cosmetics, personal care products (PC39)		
Environment		
CS1:	Industrial use, Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))	ERC8a
Workers		
CS2:	Industrial use, Professional use (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions)	PROC1
CS3:	Industrial use, Professional use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions)	PROC2
CS4:	Industrial use, Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)	PROC8a
CS5:	Industrial use, Professional use (Transfer of substance or mixture (charging/discharging) at dedicated facilities)	PROC8b
CS6:	Industrial use, Professional use (Non-industrial spraying)	PROC11

2.2. ES 2 Conditions of use affecting exposure

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2.2.1 ES 2 - CS 1: Control of environmental exposure: Industrial use, Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m³/d
water
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment : 2.000 m³/d
plant effluent
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

2.2.2 ES 2 - CS 2: Control of worker exposure: Industrial use, Professional use (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions) (PROC1)

Product characteristics

Concentration of the Substance in : <= 15 %
Mixture/Article : solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Human factors not influenced by risk management

Dermal exposure : None

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

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Technical conditions and measures : Automated task
Use in closed process

2.2.3 ES 2 - CS 3: Control of worker exposure: Industrial use, Professional use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 5 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Automated task
Use in closed process

2.2.4 ES 2 - CS 4: Control of worker exposure: Industrial use, Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 15 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : $\geq 90\%$
Note : Detergent
Transfer from/pouring from containers

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Automated task
Use in closed process

2.2.5 ES 2 - CS 5: Control of worker exposure: Industrial use, Professional use (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Product characteristics

Concentration of the Substance in Mixture/Article : $\leq 15\%$
solution
Physical Form (at time of use) : Liquid
Vapour pressure : $< 0,000022$ Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : ≤ 20 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : $\geq 90\%$
Note : Detergent
Transfer from/pouring from containers

Organisational measures to : Ensure operatives are trained to minimise exposures.

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prevent /limit releases, dispersion and exposure
Technical conditions and measures : Ensure regular inspection, cleaning and maintenance of equipment and machines.
: Automated task
Use in closed process

2.2.6 ES 2 - CS 6: Control of worker exposure: Industrial use, Professional use (Non-industrial spraying) (PROC11)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 7,5 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 50 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Automated task
Use in closed process

2.3. ES 2 Exposure estimation and reference to its source

2.3.1 ES 2 - CS 1: Environmental release and exposure: Industrial use, Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	8219,18 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR

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Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,00439 mg/L	0,000183
Freshwater	0,000935 mg/L	0,0279
Freshwater sediment	0,15 mg/kg dry weight	0,0279
Soil	0,04 mg/kg dry weight	0,0362
Marine water	0,0000907 mg/L	0,0271
Marine sediment	0,014 mg/kg dry weight	0,0271

2.3.2 ES 2 - CS 2: Worker exposure: Industrial use, Professional use (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions) (PROC1)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Inhalation exposure is considered to be not relevant.)	0
dermal	0 mg/kg bw/day (ECETOC TRA worker v2.0)	0
combined routes	Only highest exposure levels are given.	0

2.3.3 ES 2 - CS 3: Worker exposure: Industrial use, Professional use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,004 mg/kg bw/day (ECETOC TRA worker v2.0)	0,0004
combined routes	Only highest exposure levels are given.	0,0004

2.3.4 ES 2 - CS 4: Worker exposure: Industrial use, Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,21 mg/kg bw/day (ECETOC TRA worker v2.0)	0,02
combined routes	Only highest exposure levels are given.	0,02

2.3.5 ES 2 - CS 5: Worker exposure: Industrial use, Professional use (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Route of exposure and type	Exposure estimate	RCR
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of effects		
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,1 mg/kg bw/day (ECETOC TRA worker v2.0)	0,009
combined routes	Only highest exposure levels are given.	0,009

2.3.6 ES 2 - CS 6: Worker exposure: Industrial use, Professional use (Non-industrial spraying) (PROC11)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0,14 mg/m ³ (ART)	0,009
dermal	8,04 mg/kg bw/day (ECETOC TRA worker v2.0)	0,731
combined routes	Only highest exposure levels are given.	0,74

2.4. ES 2 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
Section 2

3. ES 3: Professional use; Wide dispersive use, Detergent, Professional use of dishwashing products

3.1. Title section

Laboratory chemicals (PC21)		
Polishes and wax blends (PC31)		
Washing and cleaning products (PC35)		
Cosmetics, personal care products (PC39)		
Environment		
CS1:	Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))	ERC8a
Workers		
CS2:	Professional use (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions)	PROC1
CS3:	Professional use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions)	PROC2
CS4:	Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)	PROC8a
CS5:	Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)	PROC8a

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CS6: Professional use (Transfer of substance or mixture (charging/discharging) at dedicated facilities)	PROC8b
CS7: Professional use (Roller application or brushing)	PROC10

3.2. ES 3 Conditions of use affecting exposure

3.2.1 ES 3 - CS 1: Control of environmental exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m3/d
water
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment : 2.000 m3/d
plant effluent
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

3.2.2 ES 3 - CS 2: Control of worker exposure: Professional use (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions) (PROC1)

Product characteristics

Concentration of the Substance in : <= 15 %
Mixture/Article : solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Human factors not influenced by risk management

Dermal exposure : None

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Automated task
Use in closed process

3.2.3 ES 3 - CS 3: Control of worker exposure: Professional use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 5 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Automated task
Use in closed process

3.2.4 ES 3 - CS 4: Control of worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 10 min
Frequency of use : 1 uses per day

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Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Automated task
Use in closed process

3.2.5 ES 3 - CS 5: Control of worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 10 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %
Note : Detergent
Transfer from/pouring from containers

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Automated task
Use in closed process

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3.2.6 ES 3 - CS 6: Control of worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 10 min

Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal

Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : >= 90 %

Note : Detergent
Transfer from/pouring from containers

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : Automated task
Use in closed process

3.2.7 ES 3 - CS 7: Control of worker exposure: Professional use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h

Frequency of use : 1 uses per day

Human factors not influenced by risk management

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Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : >= 90 %

Note : Detergent
Transfer from/pouring from containers

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : Automated task
Use in closed process

3.3. ES 3 Exposure estimation and reference to its source

3.3.1 ES 3 - CS 1: Environmental release and exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	8219,18 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,00439 mg/L	0,000183
Freshwater	0,000935 mg/L	0,0279
Freshwater sediment	0,15 mg/kg dry weight	0,0279
Soil	0,04 mg/kg dry weight	0,0362
Marine water	0,0000907 mg/L	0,0271
Marine sediment	0,014 mg/kg dry weight	0,0271

3.3.2 ES 3 - CS 2: Worker exposure: Professional use (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions) (PROC1)

Route of exposure and type	Exposure estimate	RCR
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of effects		
inhalative	0 mg/m ³ (Inhalation exposure is considered to be not relevant.)	0
dermal	0 mg/kg bw/day (ECETOC TRA worker v2.0)	0
combined routes	Only highest exposure levels are given.	0

3.3.3 ES 3 - CS 3: Worker exposure: Professional use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,0004 mg/kg bw/day (ECETOC TRA worker v2.0)	0,00004
combined routes	Only highest exposure levels are given.	0,00004

3.3.4 ES 3 - CS 4: Worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	2,1 mg/kg bw/day (ECETOC TRA worker v2.0)	0,191
combined routes	Only highest exposure levels are given.	0,191

3.3.5 ES 3 - CS 5: Worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,21 mg/kg bw/day (ECETOC TRA worker v2.0)	0,02
combined routes	Only highest exposure levels are given.	0,02

3.3.6 ES 3 - CS 6: Worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,1 mg/kg bw/day (ECETOC TRA worker v2.0)	0,009

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combined routes	Only highest exposure levels are given.	0,009
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3.3.7 ES 3 - CS 7: Worker exposure: Professional use (Roller application or brushing) (PROC10)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,008 mg/kg bw/day (ECETOC TRA worker v2.0)	0,0008
combined routes	Only highest exposure levels are given.	0,0008

3.4. ES 3 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
Section 2

4. ES 4: Professional use; Wide dispersive use, Detergent, Professional use of general surface cleaning products

4.1. Title section

Laboratory chemicals (PC21)		
Polishes and wax blends (PC31)		
Washing and cleaning products (PC35)		
Cosmetics, personal care products (PC39)		
Environment		
CS1: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))		ERC8a
Workers		
CS2: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)		PROC8a
CS3: Professional use (Roller application or brushing)		PROC10
CS4: Professional use (Non-industrial spraying)		PROC11
CS5: Professional use (Treatment of articles by dipping and pouring)		PROC13

4.2. ES 4 Conditions of use affecting exposure

4.2.1 ES 4 - CS 1: Control of environmental exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

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Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m³/d
water
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment : 2.000 m³/d
plant effluent
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

4.2.2 ES 4 - CS 2: Control of worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in : <= 15 %
Mixture/Article : solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 16 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %

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Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

4.2.3 ES 4 - CS 3: Control of worker exposure: Professional use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 % solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

4.2.4 ES 4 - CS 4: Control of worker exposure: Professional use (Non-industrial spraying) (PROC11)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 7,5 % solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

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Frequency and duration of use

Exposure duration : <= 1 h
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

4.2.5 ES 4 - CS 5: Control of worker exposure: Professional use (Treatment of articles by dipping and pouring) (PROC13)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 1 h
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %

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Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

4.3. ES 4 Exposure estimation and reference to its source

4.3.1 ES 4 - CS 1: Environmental release and exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	8219,18 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,00439 mg/L	0,000183
Freshwater	0,000935 mg/L	0,0279
Freshwater sediment	0,15 mg/kg dry weight	0,0279
Soil	0,04 mg/kg dry weight	0,0362
Marine water	0,0000907 mg/L	0,0271
Marine sediment	0,014 mg/kg dry weight	0,0271

4.3.2 ES 4 - CS 2: Worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	2,1 mg/kg bw/day (ECETOC TRA worker v2.0)	0,191
dermal	0,21 mg/kg bw/day (ECETOC TRA worker v2.0)	0,019
combined routes	Only highest exposure levels are given.	0,191

4.3.3 ES 4 - CS 3: Worker exposure: Professional use (Roller application or brushing) (PROC10)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0

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dermal	4,11 mg/kg bw/day (ECETOC TRA worker v2.0)	0,377
dermal	0,41 mg/kg bw/day (ECETOC TRA worker v2.0)	0,038
combined routes	Only highest exposure levels are given.	0,377

4.3.4 ES 4 - CS 4: Worker exposure: Professional use (Non-industrial spraying) (PROC11)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0,17 mg/m ³ (ART)	0,011
dermal	8,04 mg/kg bw/day (ECETOC TRA worker v2.0)	0,727
dermal	0,40 mg/kg bw/day (ECETOC TRA worker v2.0)	0,036
combined routes	Only highest exposure levels are given.	0,738

4.3.5 ES 4 - CS 5: Worker exposure: Professional use (Treatment of articles by dipping and pouring) (PROC13)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,013 mg/kg bw/day (ECETOC TRA worker v2.0)	0,0012
combined routes	Only highest exposure levels are given.	0,0012

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

ECHA guidance for downstream users
Section 2

5. ES 5: Professional use; Wide dispersive use, Detergent, Professional use of floor care products

5.1. Title section

Laboratory chemicals (PC21)	
Polishes and wax blends (PC31)	
Washing and cleaning products (PC35)	
Cosmetics, personal care products (PC39)	
Environment	
CS1: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))	ERC8a
Workers	

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CS2: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)	PROC8a
CS3: Professional use (Roller application or brushing)	PROC10
CS4: Professional use (Non-industrial spraying)	PROC11

5.2. ES 5 Conditions of use affecting exposure

5.2.1 ES 5 - CS 1: Control of environmental exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m3/d
water
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment : 2.000 m3/d
plant effluent
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

5.2.2 ES 5 - CS 2: Control of worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in : <= 15 %
Mixture/Article solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 20 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

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Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : $\geq 90\%$

Note : Detergent
Transfer from/pouring from containers

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : No specific measures identified.

5.2.3 ES 5 - CS 3: Control of worker exposure: Professional use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article : $\leq 15\%$
solution

Physical Form (at time of use) : Liquid

Vapour pressure : $< 0,000022$ Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : ≤ 8 h

Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : $\geq 90\%$

Note : Detergent
Transfer from/pouring from containers

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Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

5.2.4 ES 5 - CS 4: Control of worker exposure: Professional use (Non-industrial spraying) (PROC11)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 7,5 % solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %
Note : Detergent
Transfer from/pouring from containers

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

5.3. ES 5 Exposure estimation and reference to its source

5.3.1 ES 5 - CS 1: Environmental release and exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
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Air	0 kg/day	EUSES v2.1
Water	8219,18 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,00439 mg/L	0,000183
Freshwater	0,000935 mg/L	0,0279
Freshwater sediment	0,15 mg/kg dry weight	0,0279
Soil	0,04 mg/kg dry weight	0,0362
Marine water	0,0000907 mg/L	0,0271
Marine sediment	0,014 mg/kg dry weight	0,0271

5.3.2 ES 5 - CS 2: Worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	2,1 mg/kg bw/day (ECETOC TRA worker v2.0)	0,191
dermal	0,21 mg/kg bw/day (ECETOC TRA worker v2.0)	0,019
combined routes	Only highest exposure levels are given.	0,191

5.3.3 ES 5 - CS 3: Worker exposure: Professional use (Roller application or brushing) (PROC10)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,37 mg/kg bw/day (ECETOC TRA worker v2.0)	0,034
dermal	0,037 mg/kg bw/day (ECETOC TRA worker v2.0)	0,003
combined routes	Only highest exposure levels are given.	0,034

5.3.4 ES 5 - CS 4: Worker exposure: Professional use (Non-industrial spraying) (PROC11)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0,037 mg/m ³ (ART)	0,003
dermal	0,73 mg/kg bw/day (ECETOC TRA worker v2.0)	0,066
dermal	0,073 mg/kg bw/day (ECETOC TRA worker v2.0)	0,007
combined routes	Only highest exposure levels are given.	0,069

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5.4. ES 5 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
Section 2

6. ES 6: Professional use; Wide dispersive use, Detergent, Professional use of maintenance products

6.1. Title section

Laboratory chemicals (PC21)		
Polishes and wax blends (PC31)		
Washing and cleaning products (PC35)		
Cosmetics, personal care products (PC39)		
Environment		
CS1:	Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))	ERC8a
Workers		
CS2:	Professional use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions)	PROC2
CS3:	Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)	PROC8a
CS4:	Professional use (Roller application or brushing)	PROC10
CS5:	Professional use (Non-industrial spraying)	PROC11

6.2. ES 6 Conditions of use affecting exposure

6.2.1 ES 6 - CS 1: Control of environmental exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface water : 18.000 m³/d
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

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Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment : 2.000 m3/d
plant effluent
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

6.2.2 ES 6 - CS 2: Control of worker exposure: Professional use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Product characteristics

Concentration of the Substance in : <= 15 %
Mixture/Article solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 5 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to : Ensure operatives are trained to minimise exposures.
prevent /limit releases, dispersion : Ensure regular inspection, cleaning and maintenance of
and exposure equipment and machines.
Technical conditions and : No specific measures identified.
measures

6.2.3 ES 6 - CS 3: Control of worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in : <= 15 %
Mixture/Article solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

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Frequency and duration of use

Exposure duration : <= 6 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

6.2.4 ES 6 - CS 4: Control of worker exposure: Professional use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 3 h
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

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6.2.5 ES 6 - CS 5: Control of worker exposure: Professional use (Non-industrial spraying) (PROC11)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 5 %
solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 90 min

Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : No specific measures identified.

6.3. ES 6 Exposure estimation and reference to its source

6.3.1 ES 6 - CS 1: Environmental release and exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	8219,18 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR

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Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,00439 mg/L	0,000183
Freshwater	0,000935 mg/L	0,0279
Freshwater sediment	0,15 mg/kg dry weight	0,0279
Soil	0,04 mg/kg dry weight	0,0362
Marine water	0,0000907 mg/L	0,0271
Marine sediment	0,014 mg/kg dry weight	0,0271

6.3.2 ES 6 - CS 2: Worker exposure: Professional use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,21 mg/kg bw/day (ECETOC TRA worker v2.0)	0,019
combined routes	Only highest exposure levels are given.	0,019

6.3.3 ES 6 - CS 3: Worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	2,1 mg/kg bw/day (ECETOC TRA worker v2.0)	0,191
dermal	0,21 mg/kg bw/day (ECETOC TRA worker v2.0)	0,019
combined routes	Only highest exposure levels are given.	0,191

6.3.4 ES 6 - CS 4: Worker exposure: Professional use (Roller application or brushing) (PROC10)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	4,11 mg/kg bw/day (ECETOC TRA worker v2.0)	0,377
combined routes	Only highest exposure levels are given.	0,377

6.3.5 ES 6 - CS 5: Worker exposure: Professional use (Non-industrial spraying) (PROC11)

Route of exposure and type	Exposure estimate	RCR
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of effects		
inhalative	0,17 mg/m ³ (ART)	0,011
dermal	5,36 mg/kg bw/day (ECETOC TRA worker v2.0)	0,487
combined routes	Only highest exposure levels are given.	0,498

6.4. ES 6 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
Section 2

7. ES 7: Professional use; Wide dispersive use, Detergent, Professional use of vehicle cleaning products

7.1. Title section

Laboratory chemicals (PC21)		
Polishes and wax blends (PC31)		
Washing and cleaning products (PC35)		
Cosmetics, personal care products (PC39)		
Environment		
CS1: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))		ERC8a
Workers		
CS2: Professional use (Chemical production where opportunity for exposure arises)		PROC4
CS3: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)		PROC8a
CS4: Professional use (Roller application or brushing)		PROC10
CS5: Professional use (Non-industrial spraying)		PROC11

7.2. ES 7 Conditions of use affecting exposure

7.2.1 ES 7 - CS 1: Control of environmental exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

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Flow rate of receiving surface water : 18.000 m3/d
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment plant effluent : 2.000 m3/d
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

7.2.2 ES 7 - CS 2: Control of worker exposure: Professional use (Chemical production where opportunity for exposure arises) (PROC4)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 % solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor or outdoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %
Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

7.2.3 ES 7 - CS 3: Control of worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in : <= 15 %

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Mixture/Article : solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 30 min

Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor or outdoor use

Risk Management Measures

Exposure routes : dermal

Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : >= 90 %

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : No specific measures identified.

7.2.4 ES 7 - CS 4: Control of worker exposure: Professional use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h

Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

Risk Management Measures

Exposure routes : dermal

Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : >= 90 %

Organisational measures to : Ensure operatives are trained to minimise exposures.

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prevent /limit releases, dispersion and exposure
Technical conditions and measures : Ensure regular inspection, cleaning and maintenance of equipment and machines.
: No specific measures identified.

7.2.5 ES 7 - CS 5: Control of worker exposure: Professional use (Non-industrial spraying) (PROC11)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor or outdoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %
Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

7.3. ES 7 Exposure estimation and reference to its source

7.3.1 ES 7 - CS 1: Environmental release and exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	8219,18 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR

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Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,00439 mg/L	0,000183
Freshwater	0,000935 mg/L	0,0279
Freshwater sediment	0,15 mg/kg dry weight	0,0279
Soil	0,04 mg/kg dry weight	0,0362
Marine water	0,0000907 mg/L	0,0271
Marine sediment	0,014 mg/kg dry weight	0,0271

7.3.2 ES 7 - CS 2: Worker exposure: Professional use (Chemical production where opportunity for exposure arises) (PROC4)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,002 mg/kg bw/day (ECETOC TRA worker v2.0)	0,00018
combined routes	Only highest exposure levels are given.	0,00018

7.3.3 ES 7 - CS 3: Worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,21 mg/kg bw/day (ECETOC TRA worker v2.0)	0,019
combined routes	Only highest exposure levels are given.	0,019

7.3.4 ES 7 - CS 4: Worker exposure: Professional use (Roller application or brushing) (PROC10)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,008 mg/kg bw/day (ECETOC TRA worker v2.0)	0,038
combined routes	Only highest exposure levels are given.	0,038

7.3.5 ES 7 - CS 5: Worker exposure: Professional use (Non-industrial spraying) (PROC11)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	2,09 mg/m ³ (ART)	0,135

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dermal	0,032 mg/kg bw/day (ECETOC TRA worker v2.0)	0,003
combined routes	Only highest exposure levels are given.	0,138

7.4. ES 7 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
Section 2

8. ES 8: Professional use; Wide dispersive use, Detergent, Professional use of food beverage and pharmaceutical products

8.1. Title section

Laboratory chemicals (PC21)		
Polishes and wax blends (PC31)		
Washing and cleaning products (PC35)		
Cosmetics, personal care products (PC39)		
Environment		
CS1: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))		ERC8a
Workers		
CS2: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)		PROC8a
CS3: Professional use (Roller application or brushing)		PROC10

8.2. ES 8 Conditions of use affecting exposure

8.2.1 ES 8 - CS 1: Control of environmental exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface water : 18.000 m³/d
Dilution Factor (River) : 10

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Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment plant effluent : 2.000 m³/d
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

8.2.2 ES 8 - CS 2: Control of worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 16 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

8.2.3 ES 8 - CS 3: Control of worker exposure: Professional use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

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Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

8.3. ES 8 Exposure estimation and reference to its source

8.3.1 ES 8 - CS 1: Environmental release and exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	8219,18 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,00439 mg/L	0,000183
Freshwater	0,000935 mg/L	0,0279
Freshwater sediment	0,15 mg/kg dry weight	0,0279
Soil	0,04 mg/kg dry weight	0,0362
Marine water	0,0000907 mg/L	0,0271
Marine sediment	0,014 mg/kg dry weight	0,0271

8.3.2 ES 8 - CS 2: Worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0

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dermal	2,01 mg/kg bw/day (ECETOC TRA worker v2.0)	0,183
combined routes	Only highest exposure levels are given.	0,183

8.3.3 ES 8 - CS 3: Worker exposure: Professional use (Roller application or brushing) (PROC10)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,081 mg/kg bw/day (ECETOC TRA worker v2.0)	0,007
combined routes	Only highest exposure levels are given.	0,007

8.4. ES 8 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
Section 2

9. ES 9: Professional use; Wide dispersive use, Detergent, Professional use of medical devices

9.1. Title section

Laboratory chemicals (PC21)	
Polishes and wax blends (PC31)	
Washing and cleaning products (PC35)	
Cosmetics, personal care products (PC39)	
Environment	
CS1: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))	ERC8a
Workers	
CS2: Professional use (Chemical production where opportunity for exposure arises)	PROC4
CS3: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)	PROC8a
CS4: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)	PROC8a
CS5: Professional use (Roller application or brushing)	PROC10
CS6: Professional use (Non-industrial spraying)	PROC11
CS7: Professional use (Treatment of articles by dipping and pouring)	PROC13

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9.2. ES 9 Conditions of use affecting exposure

9.2.1 ES 9 - CS 1: Control of environmental exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m³/d
water
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment : 2.000 m³/d
plant effluent
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

9.2.2 ES 9 - CS 2: Control of worker exposure: Professional use (Chemical production where opportunity for exposure arises) (PROC4)

Product characteristics

Concentration of the Substance in : <= 15 %
Mixture/Article solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 4 h
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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Risk Management Measures

Exposure routes	: dermal
Personal protective measures	: Wear suitable gloves tested to EN374. Use suitable eye protection.
Effectiveness (of a measure)	: $\geq 90\%$
Type of Application (Use)	: Semi-automated task Dipping, immersion and pouring
Technical conditions and measures	: Local exhaust ventilation
Effectiveness (of a measure)	: $\geq 80\%$
Organisational measures to prevent /limit releases, dispersion and exposure	: Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.

9.2.3 ES 9 - CS 3: Control of worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in Mixture/Article	: $\leq 15\%$ solution
Physical Form (at time of use)	: Liquid
Vapour pressure	: $< 0,000022$ Pa
Remarks	: Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration	: ≤ 20 min
Frequency of use	: 1 uses per day

Human factors not influenced by risk management

Dermal exposure	: Assumes that potential dermal contact is limited to hands and forearms.
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Other operational conditions affecting workers exposure

Outdoor / Indoor	: Indoor use
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Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure	: Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures	: No specific measures identified.

9.2.4 ES 9 - CS 4: Control of worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in Mixture/Article	: $\leq 15\%$ solution
Physical Form (at time of use)	: Liquid

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Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 20 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
Effectiveness (of a measure) : >= 90 %

Type of Application (Use) : Semi-automated task
Dipping, immersion and pouring

Technical conditions and measures : Local exhaust ventilation
Effectiveness (of a measure) : >= 80 %

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

9.2.5 ES 9 - CS 5: Control of worker exposure: Professional use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

9.2.6 ES 9 - CS 6: Control of worker exposure: Professional use (Non-industrial spraying) (PROC11)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 7,5 % solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

9.2.7 ES 9 - CS 7: Control of worker exposure: Professional use (Treatment of articles by dipping and pouring) (PROC13)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 % solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 150 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and

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forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
 Personal protective measures : Wear suitable gloves tested to EN374.
 Use suitable eye protection.
 Effectiveness (of a measure) : >= 90 %
 Type of Application (Use) : Semi-automated task
 Dipping, immersion and pouring
 Technical conditions and measures : Local exhaust ventilation
 Effectiveness (of a measure) : >= 80 %
 Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
 Ensure regular inspection, cleaning and maintenance of equipment and machines.

9.3. ES 9 Exposure estimation and reference to its source

9.3.1 ES 9 - CS 1: Environmental release and exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	8219,18 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,00439 mg/L	0,000183
Freshwater	0,000935 mg/L	0,0279
Freshwater sediment	0,15 mg/kg dry weight	0,0279
Soil	0,04 mg/kg dry weight	0,0362
Marine water	0,0000907 mg/L	0,0271
Marine sediment	0,014 mg/kg dry weight	0,0271

9.3.2 ES 9 - CS 2: Worker exposure: Professional use (Chemical production where opportunity for exposure arises) (PROC4)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low	0

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	vapour pressure.)	
dermal	0,0002 mg/kg bw/day (ECETOC TRA worker v2.0)	0,000018
combined routes	Only highest exposure levels are given.	0,000018

9.3.3 ES 9 - CS 3: Worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	2,01 mg/kg bw/day (ECETOC TRA worker v2.0)	0,191
combined routes	Only highest exposure levels are given.	0,191

9.3.4 ES 9 - CS 4: Worker exposure: Professional use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,002 mg/kg bw/day (ECETOC TRA worker v2.0, Local exhaust ventilation)	0,0002
combined routes	Only highest exposure levels are given.	0,0002

9.3.5 ES 9 - CS 5: Worker exposure: Professional use (Roller application or brushing) (PROC10)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,37 mg/kg bw/day (ECETOC TRA worker v2.0)	0,034
combined routes	Only highest exposure levels are given.	0,034

9.3.6 ES 9 - CS 6: Worker exposure: Professional use (Non-industrial spraying) (PROC11)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0,08 mg/m ³ (ART)	0,005
dermal	8,04 mg/kg bw/day (ECETOC TRA worker v2.0)	0,731
combined routes	Only highest exposure levels are given.	0,736

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9.3.7 ES 9 - CS 7: Worker exposure: Professional use (Treatment of articles by dipping and pouring) (PROC13)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,001 mg/kg bw/day (ECETOC TRA worker v2.0)	0,000091
combined routes	Only highest exposure levels are given.	0,000091

9.4. ES 9 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
Section 2

10. ES 10: Professional use; Wide dispersive use, Detergent, Professional use of hand cleaners

10.1. Title section

Laboratory chemicals (PC21)	
Polishes and wax blends (PC31)	
Washing and cleaning products (PC35)	
Cosmetics, personal care products (PC39)	
Environment	
CS1: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))	ERC8a
Workers	
CS2: Professional use (Treatment of articles by dipping and pouring)	PROC13

10.2. ES 10 Conditions of use affecting exposure

10.2.1 ES 10 - CS 1: Control of environmental exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

Frequency and duration of use

Continuous exposure : 365 times per year

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Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m³/d
water
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment : 2.000 m³/d
plant effluent
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

10.2.2 ES 10 - CS 2: Control of worker exposure: Professional use (Treatment of articles by dipping and pouring) (PROC13)

Product characteristics

Concentration of the Substance in : <= 7,5 %
Mixture/Article solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 40 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Technical conditions and : None
measures
Personal protective measures : None
Note : No specific measures identified.

10.3. ES 10 Exposure estimation and reference to its source

10.3.1 ES 10 - CS 1: Environmental release and exposure: Professional use (Widespread use of non-reactive processing aid (no inclusion into or onto article,

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indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	8219,18 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,00439 mg/L	0,000183
Freshwater	0,000935 mg/L	0,0279
Freshwater sediment	0,15 mg/kg dry weight	0,0279
Soil	0,04 mg/kg dry weight	0,0362
Marine water	0,0000907 mg/L	0,0271
Marine sediment	0,014 mg/kg dry weight	0,0271

10.3.2 ES 10 - CS 2: Worker exposure: Professional use (Treatment of articles by dipping and pouring) (PROC13)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	10,61 mg/kg bw/day (ECETOC TRA worker v2.0)	0,965
combined routes	Only highest exposure levels are given.	0,965

10.4. ES 10 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
Section 2

11. ES 11: Industrial use; Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Detergent, Industrial use of laundry products

11.1. Title section

Metal working fluids (PC25)
Washing and cleaning products (PC35)
Water treatment chemicals (PC37)
Environment
CS1: Industrial use (Use of non-reactive processing aid at industrial site (no ERC4, ERC5

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inclusion into or onto article), Use at industrial site leading to inclusion into/onto article)	
Workers	
CS2: Industrial use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions)	PROC2
CS3: Industrial use (Transfer of substance or mixture (charging/discharging) at dedicated facilities)	PROC8b

11.2. ES 11 Conditions of use affecting exposure

11.2.1 ES 11 - CS 1: Control of environmental exposure: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article) (ERC4, ERC5)

Remarks : AISE SPERC 4.1.v1
AISE SPERC 5.1a.v1
AISE SPERC 5.1b.v1

Amount used

Annual amount per site : 2,25 tonnes/year

Frequency and duration of use

Continuous exposure : 220 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m³/d
water
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment : 2.000 m³/d
plant effluent
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

11.2.2 ES 11 - CS 2: Control of worker exposure: Industrial use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Product characteristics

Concentration of the Substance in : <= 15 %
Mixture/Article solution

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Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 5 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Automated task
Use in closed process

11.2.3 ES 11 - CS 3: Control of worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 15 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %
Note : Detergent
Transfer from/pouring from containers

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Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Automated task
Use in closed process

11.3. ES 11 Exposure estimation and reference to its source

11.3.1 ES 11 - CS 1: Environmental release and exposure: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article) (ERC4, ERC5)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	10,23 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,00455
Freshwater	0,0109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Freshwater sediment	1,07 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Soil	0,92 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,902
Marine water	0,00109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Marine sediment	0,107 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325

11.3.2 ES 11 - CS 2: Worker exposure: Industrial use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,004 mg/kg bw/day (ECETOC TRA worker v2.0)	0,00036
combined routes	Only highest exposure levels are given.	0,00036

11.3.3 ES 11 - CS 3: Worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

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Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,1 mg/kg bw/day (ECETOC TRA worker v2.0)	0,009
combined routes	Only highest exposure levels are given.	0,009

11.4. ES 11 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
Section 2

Further details on scaling and control technologies are provided in SPERC factsheet.

12. ES 12: Industrial use; Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Detergent, Industrial use of vehicle cleaning products

12.1. Title section

Metal working fluids (PC25)		
Washing and cleaning products (PC35)		
Water treatment chemicals (PC37)		
Environment		
CS1: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article)		ERC4, ERC5
Workers		
CS2: Industrial use (Chemical production where opportunity for exposure arises)		PROC4
CS3: Industrial use (Chemical production where opportunity for exposure arises)		PROC4
CS4: Industrial use (Industrial spraying)		PROC7
CS5: Industrial use (Industrial spraying)		PROC7
CS6: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)		PROC8a
CS7: Industrial use (Roller application or brushing)		PROC10

12.2. ES 12 Conditions of use affecting exposure

12.2.1 ES 12 - CS 1: Control of environmental exposure: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at

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industrial site leading to inclusion into/onto article) (ERC4, ERC5)

Remarks : AISE SPERC 4.1.v1
AISE SPERC 5.1a.v1
AISE SPERC 5.1b.v1

Amount used

Annual amount per site : 2,25 tonnes/year

Frequency and duration of use

Continuous exposure : 220 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m³/d
water
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment : 2.000 m³/d
plant effluent
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

12.2.2 ES 12 - CS 2: Control of worker exposure: Industrial use (Chemical production where opportunity for exposure arises) (PROC4)

Product characteristics

Concentration of the Substance in : <= 15 %
Mixture/Article : solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

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Effectiveness (of a measure) : $\geq 90\%$

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : No specific measures identified.

12.2.3 ES 12 - CS 3: Control of worker exposure: Industrial use (Chemical production where opportunity for exposure arises) (PROC4)

Product characteristics

Concentration of the Substance in Mixture/Article : $\leq 15\%$ solution

Physical Form (at time of use) : Liquid

Vapour pressure : $< 0,000022$ Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : ≤ 8 h

Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

Risk Management Measures

Exposure routes : dermal

Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : $\geq 90\%$

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : No specific measures identified.

12.2.4 ES 12 - CS 4: Control of worker exposure: Industrial use (Industrial spraying) (PROC7)

Product characteristics

Concentration of the Substance in Mixture/Article : $\leq 15\%$ solution

Physical Form (at time of use) : Liquid

Vapour pressure : $< 0,000022$ Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : ≤ 8 h

Frequency of use : 1 uses per day

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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %
Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

12.2.5 ES 12 - CS 5: Control of worker exposure: Industrial use (Industrial spraying) (PROC7)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %
Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

12.2.6 ES 12 - CS 6: Control of worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

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Concentration of the Substance in Mixture/Article : <= 15 %
solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 30 min
Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor or outdoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

12.2.7 ES 12 - CS 7: Control of worker exposure: Industrial use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %

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Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

12.3. ES 12 Exposure estimation and reference to its source

12.3.1 ES 12 - CS 1: Environmental release and exposure: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article) (ERC4, ERC5)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	10,23 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,00455
Freshwater	0,0109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Freshwater sediment	1,07 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Soil	0,92 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,902
Marine water	0,00109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Marine sediment	0,107 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325

12.3.2 ES 12 - CS 2: Worker exposure: Industrial use (Chemical production where opportunity for exposure arises) (PROC4)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,002 mg/kg bw/day (ECETOC TRA worker v2.0)	0,00018
combined routes	Only highest exposure levels are given.	0,00018

12.3.3 ES 12 - CS 3: Worker exposure: Industrial use (Chemical production where opportunity for exposure arises) (PROC4)

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Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,002 mg/kg bw/day (ECETOC TRA worker v2.0, Outdoor use)	0,00018
combined routes	Only highest exposure levels are given.	0,00018

12.3.4 ES 12 - CS 4: Worker exposure: Industrial use (Industrial spraying) (PROC7)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	1,62 mg/m ³ (ART)	0,105
dermal	0,013 mg/kg bw/day (ECETOC TRA worker v2.0)	0,001
combined routes	Only highest exposure levels are given.	0,106

12.3.5 ES 12 - CS 5: Worker exposure: Industrial use (Industrial spraying) (PROC7)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	2,09 mg/m ³ (ART, Outdoor use)	0,135
dermal	0,013 mg/kg bw/day (ECETOC TRA worker v2.0, Outdoor use)	0,001
combined routes	Only highest exposure levels are given.	0,136

12.3.6 ES 12 - CS 6: Worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,21 mg/kg bw/day (ECETOC TRA worker v2.0)	0,02
combined routes	Only highest exposure levels are given.	0,02

12.3.7 ES 12 - CS 7: Worker exposure: Industrial use (Roller application or brushing) (PROC10)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,008 mg/kg bw/day (ECETOC TRA worker v2.0)	0,00073
combined routes	Only highest exposure levels are given.	0,00073

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12.4. ES 12 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users

Section 2

Further details on scaling and control technologies are provided in SPERC factsheet.

13. ES 13: Industrial use; Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Detergent, Industrial use of food beverage and pharmaceutical products

13.1. Title section

Metal working fluids (PC25)	
Washing and cleaning products (PC35)	
Water treatment chemicals (PC37)	
Environment	
CS1: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article)	ERC4, ERC5
Workers	
CS2: Industrial use (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions)	PROC1
CS3: Industrial use (Chemical production where opportunity for exposure arises)	PROC4
CS4: Industrial use (Industrial spraying)	PROC7
CS5: Industrial use (Industrial spraying)	PROC7
CS6: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)	PROC8a
CS7: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)	PROC8a
CS8: Industrial use (Transfer of substance or mixture (charging/discharging) at dedicated facilities)	PROC8b
CS9: Industrial use (Roller application or brushing)	PROC10

13.2. ES 13 Conditions of use affecting exposure

13.2.1 ES 13 - CS 1: Control of environmental exposure: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article) (ERC4, ERC5)

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Remarks : AISE SPERC 4.1.v1
AISE SPERC 5.1a.v1
AISE SPERC 5.1b.v1

Amount used

Annual amount per site : 2,25 tonnes/year

Frequency and duration of use

Continuous exposure : 220 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m³/d
water

Dilution Factor (River) : 10

Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant

Flow rate of sewage treatment : 2.000 m³/d

plant effluent

Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

13.2.2 ES 13 - CS 2: Control of worker exposure: Industrial use (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions) (PROC1)

Product characteristics

Concentration of the Substance in : <= 15 %
Mixture/Article solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

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

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and : No specific measures identified.

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measures

13.2.3 ES 13 - CS 3: Control of worker exposure: Industrial use (Chemical production where opportunity for exposure arises) (PROC4)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

13.2.4 ES 13 - CS 4: Control of worker exposure: Industrial use (Industrial spraying) (PROC7)

Remarks : Chain maintenance

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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Risk Management Measures

Exposure routes	: dermal
Personal protective measures	: Wear suitable gloves tested to EN374. Use suitable eye protection. For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure)	: >= 90 %
Organisational measures to prevent /limit releases, dispersion and exposure	: Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures	: No specific measures identified.

13.2.5 ES 13 - CS 5: Control of worker exposure: Industrial use (Industrial spraying) (PROC7)

Remarks : Foam cleaning

Product characteristics

Concentration of the Substance in Mixture/Article	: <= 15 % solution
Physical Form (at time of use)	: Liquid
Vapour pressure	: < 0,000022 Pa
Remarks	: Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration	: <= 4 min
Frequency of use	: 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes	: dermal
Personal protective measures	: Wear suitable gloves tested to EN374. Use suitable eye protection. For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure)	: >= 90 %
Organisational measures to prevent /limit releases, dispersion and exposure	: Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures	: No specific measures identified.

13.2.6 ES 13 - CS 6: Control of worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in Mixture/Article	: <= 15 % solution
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Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 10 min
Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

13.2.7 ES 13 - CS 7: Control of worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 10 min
Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %
Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Local exhaust ventilation
Effectiveness (of a measure) : >= 80 %

13.2.8 ES 13 - CS 8: Control of worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

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Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 5 min

Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal

Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : >= 90 %

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : No specific measures identified.

13.2.9 ES 13 - CS 9: Control of worker exposure: Industrial use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h

Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : No specific measures identified.

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measures

13.3. ES 13 Exposure estimation and reference to its source

13.3.1 ES 13 - CS 1: Environmental release and exposure: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article) (ERC4, ERC5)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	10,23 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,00455
Freshwater	0,0109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Freshwater sediment	1,07 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Soil	0,92 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,902
Marine water	0,00109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Marine sediment	0,107 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325

13.3.2 ES 13 - CS 2: Worker exposure: Industrial use (Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions) (PROC1)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0 mg/kg bw/day (ECETOC TRA worker v2.0, Dermal exposure is considered to be not relevant.)	0
combined routes		0

13.3.3 ES 13 - CS 3: Worker exposure: Industrial use (Chemical production where opportunity for exposure arises) (PROC4)

Route of exposure and type of effects	Exposure estimate	RCR
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inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,02 mg/kg bw/day (ECETOC TRA worker v2.0)	0,002
combined routes	Only highest exposure levels are given.	0,002

13.3.4 ES 13 - CS 4: Worker exposure: Industrial use (Industrial spraying) (PROC7)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0,18 mg/m ³ (ART, Chain maintenance)	0,012
dermal	0,013 mg/kg bw/day (ECETOC TRA worker v2.0, Chain maintenance)	0,001
combined routes	Only highest exposure levels are given.	0,013

13.3.5 ES 13 - CS 5: Worker exposure: Industrial use (Industrial spraying) (PROC7)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0,013 mg/m ³ (ART, Foam cleaning)	0,00084
dermal	0,013 mg/kg bw/day (ECETOC TRA worker v2.0, Foam cleaning)	0,001
combined routes	Only highest exposure levels are given.	0,002

13.3.6 ES 13 - CS 6: Worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	2,06 mg/kg bw/day (ECETOC TRA worker v2.0)	0,187
combined routes	Only highest exposure levels are given.	0,187

13.3.7 ES 13 - CS 7: Worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,21 mg/kg bw/day (ECETOC TRA worker v2.0, Local exhaust ventilation)	0,02
combined routes	Only highest exposure levels are given.	0,02

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13.3.8 ES 13 - CS 8: Worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,10 mg/kg bw/day (ECETOC TRA worker v2.0)	0,009
combined routes	Only highest exposure levels are given.	0,009

13.3.9 ES 13 - CS 9: Worker exposure: Industrial use (Roller application or brushing) (PROC10)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,081 mg/kg bw/day (ECETOC TRA worker v2.0)	0,007
combined routes	Only highest exposure levels are given.	0,007

13.4. ES 13 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users

Section 2

Further details on scaling and control technologies are provided in SPERC factsheet.

14. ES 14: Industrial use; Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Detergent, Industrial use of façade/surface cleaning products

14.1. Title section

Metal working fluids (PC25)		
Washing and cleaning products (PC35)		
Water treatment chemicals (PC37)		
Environment		
CS1:	Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article)	ERC4, ERC5
Workers		
CS2:	Industrial use (Transfer of substance or mixture (charging/discharging)	PROC8a

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at non dedicated-facilities)
CS3: Industrial use (Industrial spraying)

PROC7

14.2. ES 14 Conditions of use affecting exposure

14.2.1 ES 14 - CS 1: Control of environmental exposure: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article) (ERC4, ERC5)

Remarks : AISE SPERC 4.1.v1
AISE SPERC 5.1a.v1
AISE SPERC 5.1b.v1

Amount used

Annual amount per site : 2,25 tonnes/year

Frequency and duration of use

Continuous exposure : 220 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m³/d
water
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment : 2.000 m³/d
plant effluent
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

14.2.2 ES 14 - CS 2: Control of worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in : <= 15 %
Mixture/Article solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 10 min
Frequency of use : 1 uses per day

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Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : $\geq 90\%$

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : No specific measures identified.

14.2.3 ES 14 - CS 3: Control of worker exposure: Industrial use (Industrial spraying) (PROC7)

Product characteristics

Concentration of the Substance in Mixture/Article : $\leq 15\%$
solution

Physical Form (at time of use) : Liquid

Vapour pressure : $< 0,000022$ Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : ≤ 8 h

Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : $\geq 90\%$

Exposure routes : inhalative

Personal protective measures : Wear suitable respiratory protection.

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Effectiveness (of a measure)	: >= 90 %
Type of Application (Use)	: Spraying
Organisational measures to prevent /limit releases, dispersion and exposure	: Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures	: No specific measures identified.
Personal protective measures	: Wear suitable coveralls to prevent exposure to the skin. Wear suitable face shield.

14.3. ES 14 Exposure estimation and reference to its source

14.3.1 ES 14 - CS 1: Environmental release and exposure: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article) (ERC4, ERC5)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	10,23 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,00455
Freshwater	0,0109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Freshwater sediment	1,07 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Soil	0,92 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,902
Marine water	0,00109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Marine sediment	0,107 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325

14.3.2 ES 14 - CS 2: Worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,21 mg/kg bw/day (ECETOC TRA worker v2.0)	0,02
combined routes	Only highest exposure levels are given.	0,02

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14.3.3 ES 14 - CS 3: Worker exposure: Industrial use (Industrial spraying) (PROC7)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0,65 mg/m ³ (ART)	0,042
dermal	0,013 mg/kg bw/day (ECETOC TRA worker v2.0)	0,001
combined routes	Only highest exposure levels are given.	0,043

14.4. ES 14 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users

Section 2

Further details on scaling and control technologies are provided in SPERC factsheet.

15. ES 15: Industrial use; Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Detergent, Industrial use of water treatment products

15.1. Title section

Metal working fluids (PC25)		
Washing and cleaning products (PC35)		
Water treatment chemicals (PC37)		
Environment		
CS1:	Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article)	ERC4, ERC5
Workers		
CS2:	Industrial use (Chemical production where opportunity for exposure arises)	PROC4
CS3:	Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)	PROC8a
CS4:	Industrial use (Transfer of substance or mixture (charging/discharging) at dedicated facilities)	PROC8b

15.2. ES 15 Conditions of use affecting exposure

15.2.1 ES 15 - CS 1: Control of environmental exposure: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article) (ERC4, ERC5)

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Remarks : AISE SPERC 4.1.v1
AISE SPERC 5.1a.v1
AISE SPERC 5.1b.v1

Amount used

Annual amount per site : 2,25 tonnes/year

Frequency and duration of use

Continuous exposure : 220 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m³/d
water

Dilution Factor (River) : 10

Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant

Flow rate of sewage treatment : 2.000 m³/d

plant effluent

Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

15.2.2 ES 15 - CS 2: Control of worker exposure: Industrial use (Chemical production where opportunity for exposure arises) (PROC4)

Product characteristics

Concentration of the Substance in : <= 15 %
Mixture/Article solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h

Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

Risk Management Measures

Organisational measures to : Ensure operatives are trained to minimise exposures.
prevent /limit releases, dispersion Ensure regular inspection, cleaning and maintenance of

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and exposure
Technical conditions and
measures

equipment and machines.
: No specific measures identified.

15.2.3 ES 15 - CS 3: Control of worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 10 min
Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.
Effectiveness (of a measure) : >= 90 %
Note : Transfer from/pouring from containers

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

15.2.4 ES 15 - CS 4: Control of worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 5 %
solution

Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 10 min

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Frequency of use : 1 uses per day

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
For further specification, refer to section 8 of the SDS.

Effectiveness (of a measure) : $\geq 90\%$
Note : Transfer from/pouring from containers

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : No specific measures identified.

15.3. ES 15 Exposure estimation and reference to its source

15.3.1 ES 15 - CS 1: Environmental release and exposure: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article) (ERC4, ERC5)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	10,23 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR

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Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,00455
Freshwater	0,0109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Freshwater sediment	1,07 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Soil	0,92 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,902
Marine water	0,00109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Marine sediment	0,107 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325

15.3.2 ES 15 - CS 2: Worker exposure: Industrial use (Chemical production where opportunity for exposure arises) (PROC4)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,51 mg/kg bw/day (ECETOC TRA worker v2.0)	0,046
combined routes	Only highest exposure levels are given.	0,046

15.3.3 ES 15 - CS 3: Worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,21 mg/kg bw/day (ECETOC TRA worker v2.0)	0,02
combined routes	Only highest exposure levels are given.	0,02

15.3.4 ES 15 - CS 4: Worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,10 mg/kg bw/day (ECETOC TRA worker v2.0)	0,009
combined routes	Only highest exposure levels are given.	0,009

15.4. ES 15 Guidance to Downstream User to evaluate whether he

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works inside the boundaries set by the Exposure Scenario

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Section 2

Further details on scaling and control technologies are provided in SPERC factsheet.

16. ES 16: Industrial use; Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Detergent, Industrial use of metal treatment products

16.1. Title section

Metal working fluids (PC25)		
Washing and cleaning products (PC35)		
Water treatment chemicals (PC37)		
Environment		
CS1: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article)		ERC4, ERC5
Workers		
CS2: Industrial use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions)		PROC2
CS3: Industrial use (Chemical production where opportunity for exposure arises)		PROC4
CS4: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities)		PROC8a
CS5: Industrial use (Transfer of substance or mixture (charging/discharging) at dedicated facilities)		PROC8b
CS6: Industrial use (Roller application or brushing)		PROC10
CS7: Industrial use (Lubrication at high energy conditions in metal working operations)		PROC17

16.2. ES 16 Conditions of use affecting exposure

16.2.1 ES 16 - CS 1: Control of environmental exposure: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article) (ERC4, ERC5)

Remarks : AISE SPERC 4.1.v1
AISE SPERC 5.1a.v1
AISE SPERC 5.1b.v1

Amount used

Annual amount per site : 2,25 tonnes/year

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Frequency and duration of use

Continuous exposure : 220 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface water : 18.000 m3/d
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment plant effluent : 2.000 m3/d
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

16.2.2 ES 16 - CS 2: Control of worker exposure: Industrial use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 % solution
Physical Form (at time of use) : Liquid
Vapour pressure : < 0,000022 Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h
Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
Effectiveness (of a measure) : >= 90 %
Type of Application (Use) : Spraying
Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Local exhaust ventilation

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Effectiveness (of a measure) : $\geq 90\%$
Personal protective measures : Wear suitable coveralls to prevent exposure to the skin.
Wear suitable face shield.

16.2.3 ES 16 - CS 3: Control of worker exposure: Industrial use (Chemical production where opportunity for exposure arises) (PROC4)

Product characteristics

Concentration of the Substance in Mixture/Article : $\leq 15\%$ solution
Physical Form (at time of use) : Liquid
Vapour pressure : $< 0,000022$ Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : ≤ 8 h
Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
Effectiveness (of a measure) : $\geq 90\%$
Type of Application (Use) : Spraying
Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Local exhaust ventilation
Effectiveness (of a measure) : $\geq 90\%$
Personal protective measures : Wear suitable coveralls to prevent exposure to the skin.
Wear suitable face shield.

16.2.4 ES 16 - CS 4: Control of worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Product characteristics

Concentration of the Substance in Mixture/Article : $\leq 15\%$ solution
Physical Form (at time of use) : Liquid
Vapour pressure : $< 0,000022$ Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : ≤ 1 h
Frequency of use : 1 uses per day

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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
Effectiveness (of a measure) : $\geq 90\%$
Type of Application (Use) : Spraying
Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Local exhaust ventilation
Effectiveness (of a measure) : $\geq 90\%$
Personal protective measures : Wear suitable coveralls to prevent exposure to the skin.
Wear suitable face shield.

16.2.5 ES 16 - CS 5: Control of worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Product characteristics

Concentration of the Substance in Mixture/Article : $\leq 15\%$
solution
Physical Form (at time of use) : Liquid
Vapour pressure : $< 0,000022$ Pa
Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : ≤ 1 h
Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal
Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.
Effectiveness (of a measure) : $\geq 90\%$
Type of Application (Use) : Spraying
Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures : Local exhaust ventilation
Effectiveness (of a measure) : $\geq 97\%$
Personal protective measures : Wear suitable coveralls to prevent exposure to the skin.
Wear suitable face shield.

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16.2.6 ES 16 - CS 6: Control of worker exposure: Industrial use (Roller application or brushing) (PROC10)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h

Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Risk Management Measures

Exposure routes : dermal

Personal protective measures : Wear suitable gloves tested to EN374.
Use suitable eye protection.

Effectiveness (of a measure) : >= 90 %

Type of Application (Use) : Spraying

Organisational measures to prevent /limit releases, dispersion and exposure : Ensure operatives are trained to minimise exposures.
Ensure regular inspection, cleaning and maintenance of equipment and machines.

Technical conditions and measures : Local exhaust ventilation

Effectiveness (of a measure) : >= 90 %

Personal protective measures : Wear suitable coveralls to prevent exposure to the skin.
Wear suitable face shield.

16.2.7 ES 16 - CS 7: Control of worker exposure: Industrial use (Lubrication at high energy conditions in metal working operations) (PROC17)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %
solution

Physical Form (at time of use) : Liquid

Vapour pressure : < 0,000022 Pa

Remarks : Solid in solution, Covers use at ambient temperatures.

Frequency and duration of use

Exposure duration : <= 8 h

Frequency of use : 1 uses per day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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Risk Management Measures

Exposure routes	: dermal
Personal protective measures	: Wear suitable gloves tested to EN374. Use suitable eye protection.
Effectiveness (of a measure)	: >= 90 %
Type of Application (Use)	: Spraying
Organisational measures to prevent /limit releases, dispersion and exposure	: Ensure operatives are trained to minimise exposures. Ensure regular inspection, cleaning and maintenance of equipment and machines.
Technical conditions and measures	: Local exhaust ventilation
Effectiveness (of a measure)	: >= 95 %
Personal protective measures	: Wear suitable coveralls to prevent exposure to the skin. Wear suitable face shield.

16.3. ES 16 Exposure estimation and reference to its source

16.3.1 ES 16 - CS 1: Environmental release and exposure: Industrial use (Use of non-reactive processing aid at industrial site (no inclusion into or onto article), Use at industrial site leading to inclusion into/onto article) (ERC4, ERC5)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	10,23 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,00455
Freshwater	0,0109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Freshwater sediment	1,07 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Soil	0,92 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,902
Marine water	0,00109 mg/L (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325
Marine sediment	0,107 mg/kg dry weight (AISE SPERC 4.1.v1, AISE SPERC 5.1a.v1, AISE SPERC 5.1b.v1)	0,325

16.3.2 ES 16 - CS 2: Worker exposure: Industrial use (Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions) (PROC2)

Route of exposure and type	Exposure estimate	RCR
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of effects		
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,001 mg/kg bw/day (ECETOC TRA worker v2.0)	0,0001
combined routes	Only highest exposure levels are given.	0,0001

16.3.3 ES 16 - CS 3: Worker exposure: Industrial use (Chemical production where opportunity for exposure arises) (PROC4)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,005 mg/kg bw/day (ECETOC TRA worker v2.0)	0,00045
combined routes	Only highest exposure levels are given.	0,00045

16.3.4 ES 16 - CS 4: Worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at non dedicated-facilities) (PROC8a)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,002 mg/kg bw/day (ECETOC TRA worker v2.0)	0,0002
combined routes	Only highest exposure levels are given.	0,0002

16.3.5 ES 16 - CS 5: Worker exposure: Industrial use (Transfer of substance or mixture (charging/discharging) at dedicated facilities) (PROC8b)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,01 mg/kg bw/day (ECETOC TRA worker v2.0)	0,0009
combined routes	Only highest exposure levels are given.	0,0009

16.3.6 ES 16 - CS 6: Worker exposure: Industrial use (Roller application or brushing) (PROC10)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,01 mg/kg bw/day (ECETOC TRA worker v2.0)	0,0009
combined routes	Only highest exposure levels are given.	0,0009

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16.3.7 ES 16 - CS 7: Worker exposure: Industrial use (Lubrication at high energy conditions in metal working operations) (PROC17)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/m ³ (Not applicable, Not relevant because of low vapour pressure.)	0
dermal	0,002 mg/kg bw/day (ECETOC TRA worker v2.0)	0,0002
combined routes	Only highest exposure levels are given.	0,0002

16.4. ES 16 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users

Section 2

Further details on scaling and control technologies are provided in SPERC factsheet.

17. ES 17: Consumer use; Wide dispersive use, Laundry products

17.1. Title section

Washing and cleaning products (PC35)	
Cosmetics, personal care products (PC39)	
Environment	
CS1: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))	ERC8a
Consumer	
CS2: Consumer use (Washing and cleaning products)	PC35
CS3: Consumer use (Washing and cleaning products)	PC35
CS4: Consumer use (Washing and cleaning products)	PC35
CS5: Consumer use (Washing and cleaning products)	PC35
CS6: Consumer use (Cosmetics, personal care products)	PC39

17.2. ES 17 Conditions of use affecting exposure

17.2.1 ES 17 - CS 1: Control of environmental exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Amount used

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Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface water : 18.000 m³/d
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment plant effluent : 2.000 m³/d
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

17.2.2 ES 17 - CS 2: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Remarks : Detergent powders

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %

Physical Form (at time of use) : powder

Amount used

Amount per use : 200 grams

Frequency and duration of use

Exposure duration : <= 0,25 min
Frequency of use : <= 1 uses per day
Remarks : Machines
Frequency of use : <= 365 times per year
Remarks : Machines
Exposure duration : <= 10 min
Frequency of use : <= 1 uses per day
Remarks : Manual
Frequency of use : <= 104 times per year
Remarks : Manual

Human factors not influenced by risk management

Dermal exposure : Dermal exposure is considered to be not relevant.

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Remarks : Machines
Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.
Remarks : Manual

Other given operational conditions affecting consumers exposure

Outdoor / Indoor : Indoor use
Room size : 1 m3
Ventilation rate per hour : 2

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

17.2.3 ES 17 - CS 3: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Remarks : Detergent liquids

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %

Physical Form (at time of use) : Liquid

Amount used

Liquids :

Frequency and duration of use

Exposure duration : <= 0,75 min
Frequency of use : <= 1 uses per day
Remarks : Machines
Frequency of use : <= 365 times per year
Remarks : Machines
Exposure duration : <= 10 min
Frequency of use : <= 1 uses per day
Remarks : Manual
Frequency of use : <= 104 times per year
Remarks : Manual

Human factors not influenced by risk management

Dermal exposure : Dermal exposure is considered to be not relevant.
Remarks : Machines
Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.
Remarks : Manual

Other given operational conditions affecting consumers exposure

Outdoor / Indoor : Indoor use
Room size : 1 m3
Ventilation rate per hour : 2

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Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

17.2.4 ES 17 - CS 4: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %

Physical Form (at time of use) : Liquid, Sprays, Pastes

Amount used

Liquids :

Frequency and duration of use

Exposure duration : <= 0,05 min

Frequency of use : <= 1 uses per day

Remarks : Spraying, Spot removers (spray)

Frequency of use : <= 1 uses per day

Remarks : washing off, Spot removers (spray), Spot removers (liquid), Pastes

Frequency of use : <= 128 times per year

Remarks : Spot removers (spray), Spot removers (liquid), Pastes

Other given operational conditions affecting consumers exposure

Outdoor / Indoor : Indoor use

Room size : 1 m³

Ventilation rate per hour : 2

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

17.2.5 ES 17 - CS 5: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Remarks : Fabric conditioners

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %

Physical Form (at time of use) : Liquid

Amount used

Liquids :

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Frequency and duration of use

Exposure duration : <= 0,75 min
Frequency of use : <= 1 uses per day
Frequency of use : <= 365 times per year

Other given operational conditions affecting consumers exposure

Outdoor / Indoor : Indoor use
Room size : 1 m³
Ventilation rate per hour : 2

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

17.2.6 ES 17 - CS 6: Control of consumer exposure: Consumer use (Cosmetics, personal care products) (PC39)

Remarks : In accordance to the Article 14 (5b) of the REACH Regulation (EC) No 1907/2006, exposure estimation and risk characterisation for human health does not need to be performed for end uses in cosmetic products within the scope of Directive 76/768/EEC.

17.3. ES 17 Exposure estimation and reference to its source

17.3.1 ES 17 - CS 1: Environmental release and exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	19178,08 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,0102 mg/L	0,000426
Freshwater	0,00218 mg/L	0,0651
Freshwater sediment	0,34 mg/kg dry weight	0,0651
Soil	0,0867 mg/kg dry weight	0,0848
Marine water	0,000212 mg/L	0,0632
Marine sediment	0,033 mg/kg dry weight	0,0632

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17.3.2 ES 17 - CS 2: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	< 0,0000001 mg/kg bw/day (AISE REACT, Consexpo v4.1, Detergent powders, Machines, Overall exposure)	< 0,01
dermal	0,0045 mg/kg bw/day (AISE REACT, Consexpo v4.1, Detergent powders, Machines, Overall exposure)	0,00082
combined routes	Detergent powders, Machines	0,00082
inhalative	< 0,0000001 mg/kg bw/day (AISE REACT, Consexpo v4.1, Detergent powders, Manual, Overall exposure)	< 0,01
dermal	0,140 mg/kg bw/day (AISE REACT, Consexpo v4.1, Detergent powders, Manual, Overall exposure)	0,025
combined routes	Detergent powders, Manual	0,025

17.3.3 ES 17 - CS 3: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0,0000022 mg/kg bw/day (AISE REACT, Consexpo v4.1, Detergent liquids, Machines, Overall exposure)	< 0,01
dermal	0,029 mg/kg bw/day (AISE REACT, Consexpo v4.1, Detergent liquids, Machines, Overall exposure)	0,005
combined routes	Detergent liquids, Machines	0,005
inhalative	0,0000022 mg/kg bw/day (AISE REACT, Consexpo v4.1, Detergent liquids, Manual, Overall exposure)	< 0,01
dermal	0,164 mg/kg bw/day (AISE REACT, Consexpo v4.1, Detergent powders, Manual, Overall exposure)	0,030
combined routes	Detergent powders, Manual	0,030

17.3.4 ES 17 - CS 4: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/kg bw/day (AISE REACT, Consexpo v4.1, Pastes)	0
dermal	2,19 mg/kg bw/day (AISE REACT, Consexpo v4.1, Pastes)	0,398
combined routes	Pastes	0,398
inhalative	0 mg/kg bw/day (AISE REACT, Consexpo v4.1, Spot removers (liquid))	0
dermal	0,596 mg/kg bw/day (AISE REACT, Consexpo v4.1, Spot removers (liquid))	0,103
combined routes	Spot removers (liquid)	0,103
inhalative	< 0,00001 mg/kg bw/day (AISE REACT, Consexpo v4.1, Spot removers (spray), Overall exposure)	< 0,01

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dermal	1,752 mg/kg bw/day (AISE REACT, Consexpo v4.1, Spot removers (spray), Overall exposure)	0,318
combined routes	Spot removers (spray)	0,318

17.3.5 ES 17 - CS 5: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
inhalative	0 mg/kg bw/day (AISE REACT, Consexpo v4.1, Fabric conditioners, Overall exposure)	0
dermal	0,730 mg/kg bw/day (AISE REACT, Consexpo v4.1, Fabric conditioners, Overall exposure)	0,133
combined routes	AISE REACT, Consexpo v4.1, Fabric conditioners	0,133

17.4. ES 17 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
Section 2

18. ES 18: Consumer use; Wide dispersive use, Hand dishwashing liquids, Machine dishwashing products

18.1. Title section

Washing and cleaning products (PC35)	
Cosmetics, personal care products (PC39)	
Environment	
CS1: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))	ERC8a
Consumer	
CS2: Consumer use (Washing and cleaning products)	PC35
CS3: Consumer use (Cosmetics, personal care products)	PC39

18.2. ES 18 Conditions of use affecting exposure

18.2.1 ES 18 - CS 1: Control of environmental exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

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Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m³/d
water
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment : 2.000 m³/d
plant effluent
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

18.2.2 ES 18 - CS 2: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Product characteristics

Concentration of the Substance in : <= 15 %
Mixture/Article

Physical Form (at time of use) : Liquid
Remarks : Hand dishwashing liquids
Physical Form (at time of use) : Liquid, powder, tablet
Remarks : Machine dishwashing products

Amount used

Amount per use : <= 7 grams

Frequency and duration of use

Exposure duration : <= 0,75 h
Frequency of use : <= 3 uses per day
Remarks : Hand dishwashing liquids

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.
Remarks : Hand dishwashing liquids
Dermal exposure : Dermal exposure is considered to be not relevant.
Remarks : Machine dishwashing products

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Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

18.2.3 ES 18 - CS 3: Control of consumer exposure: Consumer use (Cosmetics, personal care products) (PC39)

Remarks : In accordance to the Article 14 (5b) of the REACH Regulation (EC) No 1907/2006, exposure estimation and risk characterisation for human health does not need to be performed for end uses in cosmetic products within the scope of Directive 76/768/EEC.

18.3. ES 18 Exposure estimation and reference to its source

18.3.1 ES 18 - CS 1: Environmental release and exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	19178,08 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,0102 mg/L	0,000426
Freshwater	0,00218 mg/L	0,0651
Freshwater sediment	0,34 mg/kg dry weight	0,0651
Soil	0,0867 mg/kg dry weight	0,0848
Marine water	0,000212 mg/L	0,0632
Marine sediment	0,033 mg/kg dry weight	0,0632

18.3.2 ES 18 - CS 2: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
oral	0,00074 mg/kg bw/day (AISE REACT, Hand dishwashing liquids, Overall exposure)	0,002
inhalative	0 mg/kg bw/day (AISE REACT, Hand dishwashing liquids, Overall exposure)	0
dermal	0,156 mg/kg bw/day (AISE REACT, Hand dishwashing	0,028

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	liquids, Overall exposure)	
combined routes	Hand dishwashing liquids	0,030
oral	0,00074 mg/kg bw/day (AISE REACT, Machine dishwashing products, Overall exposure)	0,002
inhalative	0 mg/kg bw/day (AISE REACT, Machine dishwashing products, Overall exposure)	0
dermal	0 mg/kg bw/day (AISE REACT, Machine dishwashing products, Overall exposure)	0
combined routes	Machine dishwashing products	0,002

18.4. ES 18 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
Section 2

19. ES 19: Consumer use; Wide dispersive use, All purpose cleaners

19.1. Title section

Washing and cleaning products (PC35)	
Cosmetics, personal care products (PC39)	
Environment	
CS1: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))	ERC8a
Consumer	
CS2: Consumer use (Washing and cleaning products)	PC35
CS3: Consumer use (Washing and cleaning products)	PC35
CS4: Consumer use (Washing and cleaning products)	PC35
CS5: Consumer use (Washing and cleaning products)	PC35
CS6: Consumer use (Cosmetics, personal care products)	PC39

19.2. ES 19 Conditions of use affecting exposure

19.2.1 ES 19 - CS 1: Control of environmental exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

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Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface water : 18.000 m³/d

Dilution Factor (River) : 10

Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant

Flow rate of sewage treatment plant effluent : 2.000 m³/d

Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

19.2.2 ES 19 - CS 2: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Remarks : Liquid cleaners

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %

Physical Form (at time of use) : Liquid

Amount used

Amount per use : <= 63 grams

Concentration after dilution for use maximum : 12,6 g/l

Frequency and duration of use

Frequency of use : <= 104 times per year

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

19.2.3 ES 19 - CS 3: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

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Remarks : Liquid cleaners
Gel

Product characteristics

Concentration of the Substance in Mixture/Article : <= 5 %

Physical Form (at time of use) : Gel

Amount used

Amount per use : <= 63 grams

Frequency and duration of use

Frequency of use : <= 104 times per year

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands.

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

19.2.4 ES 19 - CS 4: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Remarks : Sprays

Product characteristics

Concentration of the Substance in Mixture/Article : <= 5 %

Physical Form (at time of use) : Sprays

Amount used

Amount per use : <= 16,2 grams

Frequency and duration of use

Frequency of use : <= 365 times per year

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

19.2.5 ES 19 - CS 5: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Remarks : Wipes

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Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %

Physical Form (at time of use) : Wipes

Amount used

Amount per use : <= 3,4 grams

Frequency and duration of use

Frequency of use : <= 365 times per year

Human factors not influenced by risk management

Dermal exposure : Palm of one hand

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

19.2.6 ES 19 - CS 6: Control of consumer exposure: Consumer use (Cosmetics, personal care products) (PC39)

Remarks : In accordance to the Article 14 (5b) of the REACH Regulation (EC) No 1907/2006, exposure estimation and risk characterisation for human health does not need to be performed for end uses in cosmetic products within the scope of Directive 76/768/EEC.

19.3. ES 19 Exposure estimation and reference to its source

19.3.1 ES 19 - CS 1: Environmental release and exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	19178,08 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR

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Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,0102 mg/L	0,000426
Freshwater	0,00218 mg/L	0,0651
Freshwater sediment	0,34 mg/kg dry weight	0,0651
Soil	0,0867 mg/kg dry weight	0,0848
Marine water	0,000212 mg/L	0,0632
Marine sediment	0,033 mg/kg dry weight	0,0632

19.3.2 ES 19 - CS 2: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
oral	0 mg/kg bw/day (Consexpo v4.1, Liquid cleaners, Overall exposure)	0
inhalative	< 0,0000001 mg/kg bw/day (Consexpo v4.1, Liquid cleaners, Overall exposure)	< 0,01
dermal	0,176 mg/kg bw/day (Consexpo v4.1, Liquid cleaners, Overall exposure)	0,032
combined routes	Liquid cleaners	0,032

19.3.3 ES 19 - CS 3: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
oral	0 mg/kg bw/day (Consexpo v4.1, Liquid cleaners, Gel)	0
inhalative	0,0000008 mg/kg bw/day (Consexpo v4.1, Liquid cleaners, Gel)	< 0,01
dermal	2,0 mg/kg bw/day (Consexpo v4.1, Liquid cleaners, Gel)	0,364
dermal	0,20 mg/kg bw/day (Consexpo v4.1, Liquid cleaners, Gel)	0,036
combined routes	Liquid cleaners, Gel, Only highest exposure levels are given.	0,364

19.3.4 ES 19 - CS 4: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
oral	0,00062 mg/kg bw/day (Consexpo v4.1, Overall exposure)	0,0014
inhalative	< 0,00001 mg/kg bw/day (Consexpo v4.1, Overall exposure)	< 0,01
dermal	0,139 mg/kg bw/day (Consexpo v4.1, Overall exposure)	0,025
combined routes		0,026

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19.3.5 ES 19 - CS 5: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
oral	0 mg/kg bw/day (Consexpo v4.1, Wipes)	0
inhalative	< 0,00001 mg/kg bw/day (Consexpo v4.1, Wipes)	< 0,01
dermal	0,12 mg/kg bw/day (Consexpo v4.1, Wipes)	0,022
combined routes	Wipes	0,022

19.4. ES 19 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

ECHA guidance for downstream users
Section 2

20. ES 20: Consumer use; Wide dispersive use, Sanitary products

20.1. Title section

Washing and cleaning products (PC35)	
Cosmetics, personal care products (PC39)	
Environment	
CS1: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))	ERC8a
Consumer	
CS2: Consumer use (Washing and cleaning products)	PC35
CS3: Consumer use (Washing and cleaning products)	PC35
CS4: Consumer use (Washing and cleaning products)	PC35
CS5: Consumer use (Washing and cleaning products)	PC35
CS6: Consumer use (Cosmetics, personal care products)	PC39

20.2. ES 20 Conditions of use affecting exposure

20.2.1 ES 20 - CS 1: Control of environmental exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Amount used

Amounts used : 10000 tonnes/year

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Remarks : Consumer use, Professional use

Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface water : 18.000 m³/d

Dilution Factor (River) : 10

Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant

Flow rate of sewage treatment plant effluent : 2.000 m³/d

Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

20.2.2 ES 20 - CS 2: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Remarks : Bathroom cleaning (spray)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 10 %

Physical Form (at time of use) : Sprays

Amount used

Amount per use : <= 35 grams

Frequency and duration of use

Exposure duration : <= 1,5 min

Frequency of use : <= 1 days per week

Other given operational conditions affecting consumers exposure

Release area : 6,4 m²

Remarks : Surface area per amount of article containing the substance

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

20.2.3 ES 20 - CS 3: Control of consumer exposure: Consumer use (Washing and

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cleaning products) (PC35)

Remarks : Bathroom cleaning (liquid)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %

Physical Form (at time of use) : Liquid

Amount used

Amount per use : <= 44 grams

Frequency and duration of use

Frequency of use : <= 4 times per year

Other given operational conditions affecting consumers exposure

Release area : 6,4 m²

Remarks : Surface area per amount of article containing the substance

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

20.2.4 ES 20 - CS 4: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Remarks : Toilet cleaners

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %

Physical Form (at time of use) : Liquid

Amount used

Amount per use : <= 80 grams

Frequency and duration of use

Exposure duration : <= 2 min

Frequency of use : <= 260 times per year

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

20.2.5 ES 20 - CS 5: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

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Remarks : Toilet cleaners

Concentration of the Substance in Mixture/Article : <= 15 %

Amount used

Amounts used : <= 70 grams

Frequency and duration of use

Application duration : <= 5 min

Frequency of use : <= 10 uses per day

Human factors not influenced by risk management

Dermal exposure : Dermal exposure is considered to be not relevant.

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

20.2.6 ES 20 - CS 6: Control of consumer exposure: Consumer use (Cosmetics, personal care products) (PC39)

Remarks : In accordance to the Article 14 (5b) of the REACH Regulation (EC) No 1907/2006, exposure estimation and risk characterisation for human health does not need to be performed for end uses in cosmetic products within the scope of Directive 76/768/EEC.

20.3. ES 20 Exposure estimation and reference to its source

20.3.1 ES 20 - CS 1: Environmental release and exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	19178,08 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR

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Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,0102 mg/L	0,000426
Freshwater	0,00218 mg/L	0,0651
Freshwater sediment	0,34 mg/kg dry weight	0,0651
Soil	0,0867 mg/kg dry weight	0,0848
Marine water	0,000212 mg/L	0,0632
Marine sediment	0,033 mg/kg dry weight	0,0632

20.3.2 ES 20 - CS 2: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
oral	0,0005 mg/kg bw/day (Consexpo v4.1, Bathroom cleaning (spray), Overall exposure)	0,001
inhalative	0,0000047 mg/kg bw/day (Consexpo v4.1, Bathroom cleaning (spray), Overall exposure)	< 0,01
dermal	0,081 mg/kg bw/day (Consexpo v4.1, Bathroom cleaning (spray), Overall exposure)	0,015
combined routes	Bathroom cleaning (spray)	0,016

20.3.3 ES 20 - CS 3: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
oral	0 mg/kg bw/day (Consexpo v4.1, Bathroom cleaning (liquid), Overall exposure)	0
inhalative	< 0,0000001 mg/kg bw/day (Consexpo v4.1, Bathroom cleaning (liquid), Overall exposure)	< 0,01
dermal	0,48 mg/kg bw/day (Consexpo v4.1, Bathroom cleaning (liquid), Overall exposure)	0,087
combined routes	Bathroom cleaning (liquid)	0,087

20.3.4 ES 20 - CS 4: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
oral	0 mg/kg bw/day (Consexpo v4.1)	0
inhalative	< 0,0000001 mg/kg bw/day (Consexpo v4.1)	< 0,01
dermal	0,326 mg/kg bw/day (Consexpo v4.1)	0,059
combined routes		0,059

20.3.5 ES 20 - CS 5: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

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products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
oral	0 mg/kg bw/day (Consexpo v4.1)	0
inhalative	0,0015 mg/kg bw/day (Consexpo v4.1)	0,001
dermal	0 mg/kg bw/day (Consexpo v4.1)	0
combined routes		0,001

20.4. ES 20 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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21. ES 21: Consumer use; Wide dispersive use, Floor cleaning products

21.1. Title section

Washing and cleaning products (PC35)	
Cosmetics, personal care products (PC39)	
Environment	
CS1: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))	ERC8a
Consumer	
CS2: Consumer use (Washing and cleaning products)	PC35
CS3: Consumer use (Washing and cleaning products)	PC35
CS4: Consumer use (Washing and cleaning products)	PC35
CS5: Consumer use (Washing and cleaning products)	PC35
CS6: Consumer use (Washing and cleaning products)	PC35

21.2. ES 21 Conditions of use affecting exposure

21.2.1 ES 21 - CS 1: Control of environmental exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

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Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface water : 18.000 m3/d

Dilution Factor (River) : 10

Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant

Flow rate of sewage treatment plant effluent : 2.000 m3/d

Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

21.2.2 ES 21 - CS 2: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Remarks : Carpet cleaning (liquids)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %

Physical Form (at time of use) : Liquid

Amount used

Amount per use : <= 0,5 l

Frequency and duration of use

Exposure duration : <= 110 min

Frequency of use : 0,5 days per year

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands.

Other given operational conditions affecting consumers exposure

Release area : 22 m2

Remarks : Surface area per amount of article containing the substance

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

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21.2.3 ES 21 - CS 3: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Remarks : Carpet powders

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %

Physical Form (at time of use) : powder

Amount used

Amount per use : 2,2 kg

Frequency and duration of use

Exposure duration : <= 22 min

Frequency of use : 0,5 days per year

Other given operational conditions affecting consumers exposure

Release area : 22 m²

Remarks : Surface area per amount of article containing the substance

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

21.2.4 ES 21 - CS 4: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Remarks : Carpet spray spot removers

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %

Physical Form (at time of use) : Sprays

Amount used

Amount per use : <= 4 grams

Frequency and duration of use

Frequency of use : <= 10 times per year

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

21.2.5 ES 21 - CS 5: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

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Remarks : Floor cleaning (liquids)

Product characteristics

Concentration of the Substance in Mixture/Article : <= 15 %

Physical Form (at time of use) : Liquid

Amount used

Amount per use : <= 250 grams

Frequency and duration of use

Exposure duration : <= 30 min

Frequency of use : <= 1 uses per day

Remarks : dermal

Frequency of use : <= 1 uses per day

Remarks : inhalative

Frequency of use : <= 104 times per year

Human factors not influenced by risk management

Dermal exposure : Assumes that potential dermal contact is limited to hands and forearms.

Other given operational conditions affecting consumers exposure

Release area : 22 m2

Remarks : Surface area per amount of article containing the substance

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

21.2.6 ES 21 - CS 6: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Remarks : Floor cleaning (liquids)

21.3. ES 21 Exposure estimation and reference to its source

21.3.1 ES 21 - CS 1: Environmental release and exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	19178,08 kg/day	EUSES v2.1

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protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,0102 mg/L	0,000426
Freshwater	0,00218 mg/L	0,0651
Freshwater sediment	0,34 mg/kg dry weight	0,0651
Soil	0,0867 mg/kg dry weight	0,0848
Marine water	0,000212 mg/L	0,0632
Marine sediment	0,033 mg/kg dry weight	0,0632

21.3.2 ES 21 - CS 2: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
oral	0 mg/kg bw/day (Consexpo v4.1, Carpet cleaning (liquids), Overall exposure)	0
inhalative	< 0,0000001 mg/kg bw/day (Consexpo v4.1, Carpet cleaning (liquids), Overall exposure)	< 0,01
dermal	0,0046 mg/kg bw/day (Consexpo v4.1, Carpet cleaning (liquids), Overall exposure)	0,00084
combined routes	Carpet cleaning (liquids)	0,00084

21.3.3 ES 21 - CS 3: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
oral	0,000525 mg/kg bw/day (Consexpo v4.1, Carpet powders, Application)	0,0012
inhalative	< 0,00001 mg/kg bw/day (Consexpo v4.1, Carpet powders, Application)	< 0,01
dermal	0,00038 mg/kg bw/day (Consexpo v4.1, Carpet powders, Application)	0,000069
combined routes	Carpet powders, Application	0,0016
oral	0,018 mg/kg bw/day (Consexpo v4.1, Carpet powders, child/infant, Residues)	0,041
inhalative	0 mg/kg bw/day (Consexpo v4.1, Carpet powders, child/infant, Residues)	0
dermal	1,19 mg/kg bw/day (Consexpo v4.1, Carpet powders, child/infant, Residues)	0,216
combined routes	Carpet powders, child/infant, Residues	0,256

21.3.4 ES 21 - CS 4: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

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Route of exposure and type of effects	Exposure estimate	RCR
oral	0 mg/kg bw/day (Consexpo v4.1, Carpet spray spot removers, Application)	0
inhalative	0 mg/kg bw/day (Consexpo v4.1, Carpet spray spot removers, Application)	0
dermal	0,0048 mg/kg bw/day (Consexpo v4.1, Carpet spray spot removers, Application)	0,00087
combined routes	Carpet spray spot removers, Application	0,00087

21.3.5 ES 21 - CS 5: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
oral	0 mg/kg bw/day (Consexpo v4.1, Floor cleaning (liquids), Overall exposure)	0
inhalative	< 0,00001 mg/kg bw/day (Consexpo v4.1, Floor cleaning (liquids), Overall exposure)	< 0,01
dermal	0,631 mg/kg bw/day (Consexpo v4.1, Floor cleaning (liquids), Overall exposure)	0,115
combined routes	Floor cleaning (liquids)	0,115

21.4. ES 21 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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Section 2

22. ES 22: Consumer use; Wide dispersive use, Oven cleaners

22.1. Title section

Washing and cleaning products (PC35)	
Cosmetics, personal care products (PC39)	
Environment	
CS1: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor))	ERC8a
Consumer	
CS2: Consumer use (Washing and cleaning products)	PC35
CS3: Consumer use (Cosmetics, personal care products)	PC39

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22.2. ES 22 Conditions of use affecting exposure

22.2.1 ES 22 - CS 1: Control of environmental exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Amount used

Amounts used : 10000 tonnes/year
Remarks : Consumer use, Professional use

Frequency and duration of use

Continuous exposure : 365 times per year

Environment factors not influenced by risk management

Flow rate of receiving surface : 18.000 m³/d
water
Dilution Factor (River) : 10
Dilution Factor (Coastal Areas) : 100

Technical conditions and measures / Organizational measures

Remarks : No specific measures identified.

Conditions and measures related to sewage treatment plant

Type of Sewage Treatment Plant : Municipal Sewage Treatment Plant
Flow rate of sewage treatment : 2.000 m³/d
plant effluent
Sludge Treatment : partially, anaerobic

Conditions and measures related to external recovery of waste

Recovery Methods : Not applicable

22.2.2 ES 22 - CS 2: Control of consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Remarks : Oven cleaners

Product characteristics

Concentration of the Substance in : <= 10 %
Mixture/Article

Physical Form (at time of use) : Sprays

Amount used

Amount per use : <= 24 grams

Frequency and duration of use

Exposure duration : <= 30 min
Frequency of use : <= 1 uses per day
Frequency of use : <= 26 times per year

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Other given operational conditions affecting consumers exposure

Release area : 0,9 m2
Remarks : Surface area per amount of article containing the substance

Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)

Consumer Measures : Avoid prolonged or repeated contact with skin.
Wash thoroughly after contact with skin areas.

22.2.3 ES 22 - CS 3: Control of consumer exposure: Consumer use (Cosmetics, personal care products) (PC39)

Remarks : In accordance to the Article 14 (5b) of the REACH Regulation (EC) No 1907/2006, exposure estimation and risk characterisation for human health does not need to be performed for end uses in cosmetic products within the scope of Directive 76/768/EEC.

22.3. ES 22 Exposure estimation and reference to its source

22.3.1 ES 22 - CS 1: Environmental release and exposure: Consumer use (Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)) (ERC8a)

Release route	Release rate	Release estimation method
Air	0 kg/day	EUSES v2.1
Water	19178,08 kg/day	EUSES v2.1

protection target	Exposure estimation and reference to its source (EUSES v2.1)	RCR
Indirect exposure to humans via the environment	Qualitative approach used to conclude safe use.	
Sewage treatment plant	0,0102 mg/L	0,000426
Freshwater	0,00218 mg/L	0,0651
Freshwater sediment	0,34 mg/kg dry weight	0,0651
Soil	0,0867 mg/kg dry weight	0,0848
Marine water	0,000212 mg/L	0,0632
Marine sediment	0,033 mg/kg dry weight	0,0632

22.3.2 ES 22 - CS 2: Consumer exposure: Consumer use (Washing and cleaning products) (PC35)

Route of exposure and type of effects	Exposure estimate	RCR
oral	0,000164 mg/kg bw/day (Consexpo v4.1, Oven cleaners,	0,00037

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	Overall exposure)	
inhalative	< 0,00001 mg/kg bw/day (Consexpo v4.1, Oven cleaners, Overall exposure)	< 0,01
dermal	0,040 mg/kg bw/day (Consexpo v4.1, Oven cleaners, Overall exposure)	0,0072
combined routes	Oven cleaners	0,0076

22.4. ES 22 Guidance to Downstream User to evaluate whether he works inside the boundaries set by the Exposure Scenario

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