

Safety Data Sheet in accordance with Regulation (EU) 1907/2006 as amended



Kieralon SAS 60

0120

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Substance key: SXR005024

Revision Date: 19.11.2024

Version : 3 - 5 / EU

Date of printing : 03.03.2025

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

1.1. Product identifier

Trade name

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Material number: 102490

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

Relevant identified uses of the substance or mixture

Industry sector : Detergent

Type of use : Raw material

Exposure scenarios: see annex

1.3. Details of the supplier of the safety data sheet

Identification of the company

ARCHROMATURKEY Kimya Sanayi

ve Ticaret Ltd. Şti.

Gebze Organize Sanayi Bölgesi İhsan Dede Cad. No:124 Gebze

41480 Kocaeli / TURKEY

Telephone no. : +90 262 672 12 12

Information about the substance/mixture

e-mail: PS.MSDS-Europe@archroma.com

1.4. Emergency telephone number

+49 69 2222 5285, +33 1 7211 0003 (24 h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according CLP regulation (Regulation (EC) No. 1272/2008, as amended)

Hazard class	Hazard category	H-pharse
Skin irritation	Category 2	Causes skin irritation.
Serious eye damage	Category 1	Causes serious eye damage.
Chronic aquatic toxicity	Category 3	Harmful to aquatic life with long lasting effects.

2.2. Label elements

Labelling according CLP regulation (Regulation (EC) No. 1272/2008, as amended)

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Hazard pictograms



Signal word
Danger

Hazard statements

H315

Causes skin irritation.

H318

Causes serious eye damage.

H412

Harmful to aquatic life with long lasting effects.

Precautionary statements

P273

Avoid release to the environment.

P280

Wear eye protection/ face protection.

P280

Wear protective gloves.

P362 + P364

Take off contaminated clothing and wash it before reuse.

P305 + P351 + P338 +

IF IN EYES: Rinse cautiously with water for several minutes.

P310

Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.

P391

Collect spillage.

P501

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

2.3. Other hazards

The substance does not meet the criteria for PBT or vPvB substance.

Contains no components identified as PBT or vPvB with a content $\geq 0,1$ %

Contains no component identified as having Endocrine disrupting properties with a content $\geq 0,1$ %

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Chemical characterization

Secondary alkane sulphonate, sodium salt (60% active)

INCI name

Sodium C14-17 Sec Alkyl Sulfonate

Hazardous ingredients

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Sulfonic acids, C14-17-sec-alkane, sodium salts

Concentration : $\geq 60 - < 70$ %

CAS number : 68608-26-4, 97489-15-1

GHS classification EC

Acute toxicity	Category 4	H302
Skin irritation	Category 2	H315
Serious eye damage	Category 1	H318
Chronic aquatic toxicity	Category 3	H412

Specific concentration limits:

Skin corrosion/irritation	Category 2	> 10 %
Serious eye damage/eye irritation	Category 2	> 10 - 15 %
Serious eye damage/eye irritation	Category 1	> 15 %
Acute toxicity	Category 4	> 60 %

The text of the H-phrases is shown in section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove/Take off immediately all contaminated clothing.

After inhalation

If inhaled, remove to fresh air.

Get medical advice/ attention.

After contact with skin

In case of contact, immediately flush skin with plenty of water.

After contact with eyes

In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

After ingestion

Get medical attention immediately.

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

Symptoms

The possible symptoms known are those derived from the labelling (see section 2).

Hazards

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

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

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Treatment

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water spray jet

Foam

Carbon dioxide (CO₂)

Dry powder

5.2. Special hazards arising from the substance or mixture

In case of fire hazardous decomposition products may be produced such as:

Carbon monoxide and carbon dioxide

5.3. Advice for firefighters

Special protective equipment for firefighting

Self-contained breathing apparatus

Further information

Cool endangered containers with water spray jet.

Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear suitable protective equipment.

6.2. Environmental precautions

Do not allow to enter drains or waterways

6.3. Methods and material for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).

Treat recovered material as described in the section "Disposal considerations".

6.4. Reference to other sections

Additional information

Information regarding Safe handling, see chapter 7.

For personal protection see section 8.

Information regarding Waste Disposal, see chapter 13.

SECTION 7: Handling and storage

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7.1. Precautions for safe handling

Advice on safe handling

Handle and open container with care.

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.

Do not eat, drink or smoke when using this product.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

Keep only in the original container.

Advice on storage compatibility

Keep away from food, drink and animal feedingstuffs.

Further information on storage conditions

Sensitive to frost - In case of the product becoming opaque, thickening, crystalline or being frozen due to the effects of cold, it has to be slowly warmed up to approx. 50°C and homogenized. After a short stirring time the product is once again ready for use.

Keep containers tightly closed in a cool, well-ventilated place.

Handle and open container with care.

Do not freeze.

7.3. Specific end use(s)

No further recommendations.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure limit values

Exposure limit values are not available.

DNEL/DMEL values

DNEL/DMEL values are not available.

PNEC values

PNEC values are not available.

8.2. Exposure controls

Appropriate engineering controls

Local ventilation recommended - mechanical ventilation may be used.

General protective measures

Avoid contact with skin and eyes.

Respiratory protection :

Use respiratory protection in case of insufficient exhaust ventilation or prolonged exposure

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Hand protection :	Long-term exposure Impervious butyl rubber gloves Minimum breakthrough time / gloves : 480 min Minimum thickness / gloves 0,7 mm For short-term exposure (splash protection): Nitrile rubber gloves. Minimum breakthrough time / gloves : 30 min Minimum thickness / gloves 0,4 mm 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.
Eye protection :	Safety glasses
Body protection :	working clothes

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state :	liquid
Form :	paste
Colour :	yellow
Odour :	characteristic
Odour threshold :	not available
Pour point :	not determined
Boiling point/boiling range :	> 100 °C
Lower explosion limit :	Not applicable
Upper explosive limit :	Not applicable
Flash point :	> 100 °C Method : Expert judgement
Ignition temperature :	Not applicable
Self-ignition temperature :	The substance or mixture is not classified as pyrophoric.
Thermal decomposition :	> 250 °C
pH value :	ca. 7 (20 °C, 5 g/l) Method : ISO 4316
Viscosity (kinematic) :	not available
Viscosity (dynamic) :	ca. 7.000 mPa.s (20 °C)
Solubility in water :	ca. 500 g/l (25 °C)

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Octanol/water partition coefficient (log Pow) :	This property is not applicable for mixtures.
Vapour pressure :	Corresp. to vapour pressure of water
Density :	ca. 1,08 g/cm ³ (30 °C) Method : DIN 51757
Relative Density:	approx. 1,08 (30 °C)
Vapour density relative to air :	not available
Particle size :	Not applicable

9.2. Other information

Explosive properties :	Explosive according transport regulation : Not explosive Method : Expert judgement
Combustion number :	not tested.
Oxidizing properties :	Type of oxidizing effect : The substance or mixture is not classified as oxidizing. Method : Expert judgement
Corrosion of metals	Not corrosive to metals
Evaporation rate :	not available
Minimum ignition energy :	not available
Surface tension :	not available

SECTION 10: Stability and reactivity

10.1. Reactivity

No decomposition if stored and applied as directed.

10.2. Chemical stability

Stable

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.
Stable

10.4. Conditions to avoid

None known.

10.5. Incompatible materials

not known

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

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

Information related to the product itself:

Acute oral toxicity :	LD50 > 2.000 mg/kg (Rat) Method : OECD Test Guideline 401
Acute dermal toxicity :	not available
Acute inhalation toxicity :	not available
Irritant effect on skin :	irritating (Rabbit) Method : OECD Test Guideline 404
Irritant effect on eyes :	Risk of serious damage to eyes. Method : OECD Test Guideline 405 Source : CESIO The toxicological data has been taken from products of similar composition.
Sensitization :	not available
Repeated dose toxicity:	not available
Genetic toxicity in vitro :	not available
Carcinogenicity :	not available
Developmental toxicity/teratogenicity :	not available
Toxicity to reproduction/fertility :	not available
Specific target organ toxicity (STOT) - single exposure :	not available
Specific target organ toxicity (STOT) - repeated exposure :	not available
Aspiration hazard :	No data available

Information related to the component: Sulfonic acids, C14-17-sec-alkane, sodium salts

Acute oral toxicity :	LD50 > 500 - 2.000 mg/kg (Rat) Method : OECD Test Guideline 401
Acute dermal toxicity :	LD50 > 2.000 mg/kg (Mouse)
Irritant effect on skin :	Skin irritation

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Irritant effect on eyes : Corrosive

11.2. Information on other hazards

11.2.1. Endocrine disrupting properties

Information related to the product itself:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

11.2.2. Other information

Remarks

none

SECTION 12: Ecological information

12.1. Toxicity

Information related to the product itself:

Fish toxicity : not available

Fish toxicity (chronic) : not available

Daphnia toxicity : not available

Daphnia toxicity (chronic) : not available

Algae toxicity : not available

Bacteria toxicity : not available

Toxicity to soil-dwelling organisms : not available

Information related to the component: Sulfonic acids, C14-17-sec-alkane, sodium salts

Fish toxicity : LC50 > 1 - 10 mg/l (96 h, Danio rerio (zebra fish))

Fish toxicity (chronic) : NOEC 0,85 mg/l (28 d, Oncorhynchus mykiss (rainbow trout))

Daphnia toxicity : EC50 9,81 mg/l (48 h, Daphnia magna (Water flea))

Daphnia toxicity (chronic) : NOEC 0,36 mg/l (22 d, Daphnia magna (Water flea))

Algae toxicity : EC50 > 61 mg/l (72 h, Desmodesmus subspicatus (Scenedesmus subspicatus))
Method : OECD Test Guideline 201

12.2. Persistence and degradability

Information related to the product itself:

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Physico-chemical eliminability :	not available
Biodegradability :	89 % (28 d) Method : OECD Test Guideline 301E Readily biodegradable, according to appropriate OECD test. 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.
Dissolved Organic carbon (DOC) :	322 mg/g
Chemical oxygen demand (COD) :	1.510 mg/g
Information related to the component: Sulfonic acids, C14-17-sec-alkane, sodium salts	
Biodegradability :	78 % (28 d) Readily biodegradable. Method : OECD Test Guideline 301B

12.3. Bioaccumulative potential

Information related to the product itself:

Bioaccumulation: No information is available on the mixture "as is". If relevant information is available on the substances listed in Chapter 3, it is reported here.

12.4. Mobility in soil

Information related to the product itself:

Transport and distribution between environmental compartments : No information is available on the mixture "as is". If relevant information is available on the substances listed in Chapter 3, it is reported here.

12.5. Results of PBT and vPvB assessment

Information related to the product itself:

This mixture contains no substance considered to be very persistent and very bioaccumulating (vPvB).
This mixture contains no substance considered to be persistent, bioaccumulating and toxic (PBT).

12.6. Endocrine disrupting properties

Information related to the product itself:

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The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7. Other adverse effects

Information related to the product itself:

Additional ecotoxicological remarks

Avoid release to the environment.

Product does not contain any organic bound Halogens which could lead to AOX-values.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product

In accordance with local authority regulations, take to special waste incineration plant

Uncleaned packaging

Packaging that cannot be cleaned should be disposed of as product waste

SECTION 14: Transport information

Section 14.1. to 14.5.

ADR	not restricted
ADN	not restricted
RID	not restricted
IATA	not restricted
IMDG	not restricted

14.6. Special precautions for user

See sections 6 to 8 of this Safety Data Sheet.

14.7. Maritime transport in bulk according to IMO instruments

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

Other regulations

This surfactant complies 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

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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.

Apart from the data/regulations specified in this chapter, no further information is available concerning safety, health and environmental protection.

15.2. Chemical safety assessment

Chemical Safety Assessments (CSAs) are available for one or more of the component substances contained in this product, depending on the tonnage band of our dossier.

SECTION 16: Other information

List of the text of the hazard statements mentioned section 3 (H-phrases) :

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H412	Harmful to aquatic life with long lasting effects.

Legend

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
AOX	Adsorbable organic bound halogens
CAS	Chemical Abstracts Service
DMEL	Derived Minimal Effect Level (genotoxic substances)
DNEL	Derived No Effect Level
EC50	Half maximal effective concentration
GHS	Globally Harmonized System
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Lethal Concentration 50%
LD50	Lethal Dose 50%
MARPOL	International Convention for the Prevention of Pollution From Ships
NOAEC	No Observed Adverse Effect Concentration
NOAEL	No Observed Adverse Effect Level
NOEC	Non Observed Effect Concentration
OEL	Occupational Exposure Limit
PBT	Persistent, Bioaccumulative, Toxic
PEC	Predicted Environmental Concentration
PNEC	Predicted No Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	International Rule for Transport of Dangerous Substances by Railway
SVHC	Substances of Very High Concern
vPvB	very Persistent and very Bioaccumulative

This information corresponds to the present state of our knowledge and is intended as a general description of our products and their possible applications. Archroma makes no warranties, express or

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Annex

Exposure Scenario

Number	Title
ES1	Formulation or re-packing; Other (PC0); Industrial uses (SU3).
ES2	Formulation or re-packing; Various products (PC23, PC25, PC34, PC35); Industrial uses (SU3).
ES3	Use at industrial sites; Polymer preparations and compounds (PC32); Manufacture of plastics products, including compounding and conversion (SU12).
ES4	Use at industrial sites; Polymer preparations and compounds (PC32); Manufacture of plastics products, including compounding and conversion (SU12).
ES5	Use at industrial sites; Various products (PC23, PC34); Manufacture of textiles, leather, fur (SU5).
ES6	Use at industrial sites; Metal working fluids (PC25); Manufacture of fabricated metal products, except machinery and equipment (SU15).
ES7	Widespread use by professional workers; Various products (PC35, PC8); Professional uses (SU22).
ES8	Widespread use by professional workers; Polishes and wax blends (PC31); Professional uses (SU22).
ES9	Consumer use; Washing and cleaning products (PC35); Consumer uses (SU21).
ES10	Consumer use; Washing and cleaning products (PC35); Consumer uses (SU21).
ES11	Consumer use; Washing and cleaning products (PC35); Consumer uses (SU21).
ES12	Consumer use; Cosmetics, personal care products (PC39); Consumer uses (SU21).

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ES1: Formulation, Antistatic agent

1.1. Title section

Structured Short Title	: Formulation or re-packing; Other (PC0); Industrial uses (SU3).
-------------------------------	--

Environment		
CS1	Formulation into mixture	ERC2
Worker		
CS2	Mixing or blending in batch processes	PROC5
CS3	High energy	PROC24
CS4	Transfer of substance or mixture (charging/discharging) at non dedicated-facilities	PROC8a
CS5	Transfer of substance or mixture (charging/discharging) at dedicated facilities	PROC8b

1.2. Conditions of use affecting exposure

1.2.1. Control of environmental exposure: Formulation into mixture (ERC2)

Product (article) characteristics	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Daily amount for wide dispersive uses	: < 2,5 tonnes/day
Emission days	: 365
Conditions and measures related to sewage treatment plant	
STP type	: Onsite Sewage Treatment Plant
STP sludge treatment	: Controlled application of sewage sludge to agricultural soil
STP effluent	: 2.000 m3/d
Other conditions affecting environmental exposure	
Receiving surface water flow	: 18.000 m3/d

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1.2.2. Control of worker exposure: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) (PROC5)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Solid, low dustiness
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use eye protection according to EN 166. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

1.2.3. Control of worker exposure: High (mechanical) energy work-up of substances bound in/on materials and/or articles (PROC24)

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Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures. Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of one hand
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

1.2.4. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Solid, low dustiness
Vapour pressure	: 0,0001 Pa

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Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures. Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

1.2.5. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Solid, low dustiness
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	

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Ensure operatives are trained to minimise exposures.
Provide a basic standard of general ventilation (1 to 3 air changes per hour).

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

Wear suitable gloves tested to EN374.
Use eye protection according to EN 166.
Dermal - minimum efficiency of 80 %

Other conditions affecting workers exposure

Body parts exposed : Palm of both hands

Indoor or outdoor use : Indoor use

Professional or industrial settings : Industrial use

Ventilation rate per hour : 1 - 3

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.
Assumes a good basic standard of occupational hygiene is implemented
For further specification, refer to section 8 of the SDS.

1.3. Exposure estimation and reference to its source

1.3.1. Environmental release and exposure: Formulation into mixture (ERC2)

Release route	Release rate	Release estimation method
Water	0	Environmental Release Category (ERC)
Air	62,5 kg/day	Environmental Release Category (ERC)
Soil	0,01 %	Environmental Release Category (ERC)

Compartment	Exposure level	RCR
Freshwater	0,023 mg/L (EUSES)	0,384
Freshwater sediment	0,113 mg/kg dry weight (EUSES)	0,012
Sewage treatment plant	0,051 mg/L (EUSES)	0,01
Man via environment - Oral	0,739 mg/kg bw/day (EUSES)	0,104

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Agricultural soil	0,064 mg/kg dry weight (EUSES)	0,01
Marine water	0,0022 mg/L (EUSES)	0,372

1.3.2. Worker exposure: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0,5 mg/m ³ (ECETOC TRA worker v3)	0,014
dermal	systemic	long-term	1,371 mg/kg bw/day (ECETOC TRA worker v3)	0,274
dermal	local	long-term	0,2 (ECETOC TRA worker v3)	0,071
dermal	local	short-term	0,2 (ECETOC TRA worker v3)	0,071
combined routes	systemic	long-term		0,289

1.3.3. Worker exposure: High (mechanical) energy work-up of substances bound in/on materials and/or articles (PROC24)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	1 mg/m ³ (ECETOC TRA worker v3)	0,029
dermal	systemic	long-term	0,566 mg/kg bw/day (ECETOC TRA worker v3)	0,113
dermal	local	long-term	0,02 (ECETOC TRA worker v3)	0,01
dermal	local	short-term	0,02 (ECETOC TRA worker v3)	0,01
combined routes	systemic	long-term		0,563

1.3.4. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0,1 mg/m ³ (ECETOC TRA)	0,01

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			worker v3)	
dermal	systemic	long-term	2,742 mg/kg bw/day (ECETOC TRA worker v3)	0,548
dermal	local	long-term	0,2 (ECETOC TRA worker v3)	0,071
dermal	local	short-term	0,2 (ECETOC TRA worker v3)	0,071
combined routes	systemic	long-term		0,561

1.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

ECHA guidance for downstream users

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

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

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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ES2: Formulation, Detergent, Cleaning agent, Fabrics, textiles and apparel, Leather, Metal working fluids

2.1. Title section

Structured Short Title	: Formulation or re-packing; Various products (PC23, PC25, PC34, PC35); Industrial uses (SU3).
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Environment		
CS1	Formulation into mixture	ERC2
Worker		
CS2	Mixing or blending in batch processes	PROC5
CS3	Transfer of substance or mixture (charging/discharging) at non dedicated-facilities	PROC8a
CS4	Transfer of substance or mixture (charging/discharging) at dedicated facilities	PROC8b
CS5	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)	PROC9

2.2. Conditions of use affecting exposure

2.2.1. Control of environmental exposure: Formulation into mixture (ERC2)

Product (article) characteristics	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Daily amount for wide dispersive uses	: < 1,7 tonnes/day
Emission days	: 365
Conditions and measures related to sewage treatment plant	
STP type	: Onsite Sewage Treatment Plant
STP sludge treatment	: Controlled application of sewage sludge to agricultural soil
STP effluent	: 2.000 m3/d

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Other conditions affecting environmental exposure

Receiving surface water flow : 18.000 m3/d

2.2.2. Control of worker exposure: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) (PROC5)

Product (article) characteristics

Covers percentage substance in the product up to 100 %.

Physical form of product : Solid, low dustiness

Vapour pressure : 0,0001 Pa

Amount used, frequency and duration of use (or from service life)

Duration : Frequency and duration of use < 8 h

Technical and organisational conditions and measures

Ensure operatives are trained to minimise exposures.

Provide a basic standard of general ventilation (1 to 3 air changes per hour).

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

Wear suitable gloves tested to EN374.

Use eye protection according to EN 166.

Dermal - minimum efficiency of 80 %

Other conditions affecting workers exposure

Body parts exposed : Palm of both hands

Indoor or outdoor use : Indoor use

Professional or industrial settings : Industrial use

Ventilation rate per hour : 1 - 3

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.

Assumes a good basic standard of occupational hygiene is implemented

For further specification, refer to section 8 of the SDS.

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2.2.3. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Solid, low dustiness
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures. Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

2.2.4. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Product (article) characteristics
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Covers percentage substance in the product up to 100 %.	
Physical form of product	: Solid, low dustiness
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures. Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

2.2.5. Control of worker exposure: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	

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Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures. Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Use eye protection according to EN 166. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

2.3. Exposure estimation and reference to its source

2.3.1. Environmental release and exposure: Formulation into mixture (ERC2)

Release route	Release rate	Release estimation method
Water	34 kg/day	Environmental Release Category (ERC)
Air	42,5 kg/day	Environmental Release Category (ERC)
Soil	0,01 %	Environmental Release Category (ERC)

Compartment	Exposure level	RCR
Freshwater	0,028 mg/L (EUSES)	0,469
Freshwater sediment	0,139 mg/kg dry weight (EUSES)	0,015

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Sewage treatment plant	0,051 mg/L (EUSES)	0,01
Man via environment - Oral	2,239 mg/kg bw/day (EUSES)	0,315
Agricultural soil	7,725 mg/kg dry weight (EUSES)	0,606
Marine water	0,0027 mg/L (EUSES)	0,457

2.3.2. Worker exposure: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0,5 mg/m ³ (ECETOC TRA worker v3)	0,014
dermal	systemic	long-term	2,742 mg/kg bw/day (ECETOC TRA worker v3)	0,548
dermal	local	long-term	0,4 (ECETOC TRA worker v3)	0,143
dermal	local	short-term	0,4 (ECETOC TRA worker v3)	0,143
combined routes	systemic	long-term		0,563

2.3.3. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0,5 mg/m ³ (ECETOC TRA worker v3)	0,014
dermal	systemic	long-term	2,742 mg/kg bw/day (ECETOC TRA worker v3)	0,548
dermal	local	long-term	0,2 (ECETOC TRA worker v3)	0,071
dermal	local	short-term	0,2 (ECETOC TRA worker v3)	0,071
combined routes	systemic	long-term		0,563

2.3.4. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure	Exposure level	RCR
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		indicator		
inhalative	systemic	long-term	0,1 mg/m ³ (ECETOC TRA worker v3)	0,01
dermal	systemic	long-term	2,742 mg/kg bw/day (ECETOC TRA worker v3)	0,548
dermal	local	long-term	0,2 (ECETOC TRA worker v3)	0,071
dermal	local	short-term	0,2 (ECETOC TRA worker v3)	0,071
combined routes	systemic	long-term		0,561

2.3.5. Worker exposure: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	2 mg/m ³ (ECETOC TRA worker v3)	0,057
dermal	systemic	long-term	0,343 mg/kg bw/day (ECETOC TRA worker v3)	0,069
dermal	local	long-term	0,05 (ECETOC TRA worker v3)	0,018
dermal	local	short-term	0,05 (ECETOC TRA worker v3)	0,018
combined routes	systemic	long-term		0,126

2.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

ECHA guidance for downstream users

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

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

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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ES3: Industrial use, Additive, emulsion, Polymerisation

3.1. Title section

Structured Short Title	: Use at industrial sites; Polymer preparations and compounds (PC32); Manufacture of plastics products, including compounding and conversion (SU12).
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Environment		
CS1	Use at industrial site leading to inclusion into/onto article	ERC5
Worker		
CS2	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions	PROC1
CS3	Industrial use	PROC7
CS4	Transfer of substance or mixture (charging/discharging) at non dedicated-facilities	PROC8a
CS5	Transfer of substance or mixture (charging/discharging) at dedicated facilities	PROC8b
CS6	Transfer of substance or mixture into small containers (dedicated filling line, including weighing)	PROC9

3.2. Conditions of use affecting exposure

3.2.1. Control of environmental exposure: Use at industrial site leading to inclusion into/onto article (ERC5)

Product (article) characteristics	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Daily amount for wide dispersive uses	: < 0,05 tonnes/day
Emission days	: 365
Conditions and measures related to sewage treatment plant	
STP type	: Onsite Sewage Treatment Plant

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STP sludge treatment	:	Controlled application of sewage sludge to agricultural soil
STP effluent	:	2.000 m3/d
Other conditions affecting environmental exposure		
Receiving surface water flow	:	18.000 m3/d

3.2.2. Control of worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Solid, low dustiness
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Handle substance within a closed system. Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374 Use eye protection according to EN 166. Dermal - minimum efficiency of 80 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of one hand
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.	

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Assumes a good basic standard of occupational hygiene is implemented
For further specification, refer to section 8 of the SDS.

3.2.3. Control of worker exposure: Industrial spraying (PROC7)

Product (article) characteristics	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Use eye protection according to EN 166. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands Hands and upper wrists
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

3.2.4. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

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Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures. Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

3.2.5. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa

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Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures. Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use eye protection according to EN 166. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

3.2.6. Control of worker exposure: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	

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Ensure operatives are trained to minimise exposures.
Provide a basic standard of general ventilation (1 to 3 air changes per hour).

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

Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.
Use eye protection according to EN 166.
Dermal - minimum efficiency of 90 %

Other conditions affecting workers exposure

Body parts exposed : Palm of both hands

Indoor or outdoor use : Indoor use

Professional or industrial settings : Industrial use

Ventilation rate per hour : 1 - 3

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.
Assumes a good basic standard of occupational hygiene is implemented
For further specification, refer to section 8 of the SDS.

3.3. Exposure estimation and reference to its source

3.3.1. Environmental release and exposure: Use at industrial site leading to inclusion into/onto article (ERC5)

Release route	Release rate	Release estimation method
Water	25 kg/day	Environmental Release Category (ERC)
Air	25 kg/day	Environmental Release Category (ERC)
Soil	1 %	Environmental Release Category (ERC)

Compartment	Exposure level	RCR
Freshwater	0,027 mg/L (EUSES)	0,446
Freshwater sediment	0,132 mg/kg dry weight (EUSES)	0,014
Sewage treatment plant	0,003 mg/L (EUSES)	0,01
Man via environment - Oral	0,862 mg/kg bw/day (EUSES)	0,121

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Agricultural soil	5,695 mg/kg dry weight (EUSES)	0,606
Marine water	0,0026 mg/L (EUSES)	0,435

3.3.2. Worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0,01 mg/m ³ (ECETOC TRA worker v3)	< 0,01
dermal	systemic	long-term	0,01 mg/kg bw/day (ECETOC TRA worker v3)	< 0,01
dermal	local	long-term	0,01 (ECETOC TRA worker v3)	< 0,01
dermal	local	short-term	0,01 (ECETOC TRA worker v3)	< 0,01
combined routes	systemic	long-term		< 0,01

3.3.3. Worker exposure: Industrial spraying (PROC7)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	5,6 mg/m ³ (ECETOC TRA worker v3)	0,16
dermal	systemic	long-term	2,146 mg/kg bw/day (ECETOC TRA worker v3)	0,429
dermal	local	long-term	0,1 (ECETOC TRA worker v3)	0,036
dermal	local	short-term	0,1 (ECETOC TRA worker v3)	0,036
combined routes	systemic	long-term		0,589

3.3.4. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	5 mg/m ³ (ECETOC TRA worker v3)	0,143

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dermal	systemic	long-term	0,274 mg/kg bw/day (ECETOC TRA worker v3)	0,055
dermal	local	long-term	0,02 (ECETOC TRA worker v3)	0,01
dermal	local	short-term	0,02 (ECETOC TRA worker v3)	0,01
combined routes	systemic	long-term		0,198

3.3.5. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities (PROC8b)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	2,5 mg/m ³ (ECETOC TRA worker v3)	0,071
dermal	systemic	long-term	0,137 mg/kg bw/day (ECETOC TRA worker v3)	0,027
dermal	local	long-term	0,01 (ECETOC TRA worker v3)	0,01
dermal	local	short-term	0,01 (ECETOC TRA worker v3)	0,01
combined routes	systemic	long-term		0,099

3.3.6. Worker exposure: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) (PROC9)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	2 mg/m ³ (ECETOC TRA worker v3)	0,057
dermal	systemic	long-term	0,343 mg/kg bw/day (ECETOC TRA worker v3)	0,069
dermal	local	long-term	0,05 (ECETOC TRA worker v3)	0,018
dermal	local	short-term	0,05 (ECETOC TRA worker v3)	0,018
combined routes	systemic	long-term		0,126

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3.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

ECHA guidance for downstream users

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

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

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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ES4: Industrial use, Additive, Manufacture of plastic materials

4.1. Title section

Structured Short Title	: Use at industrial sites; Polymer preparations and compounds (PC32); Manufacture of plastics products, including compounding and conversion (SU12).
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Environment		
CS1		ERC5
Worker		
CS2	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition	PROC3
CS4	Industrial use	PROC7
CS5	Treatment by dipping and pouring	PROC13

4.2. Conditions of use affecting exposure

4.2.1. Control of environmental exposure: Use at industrial site leading to inclusion into/onto article (ERC5)

Product (article) characteristics	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Daily amount for wide dispersive uses	: < 0,05 tonnes/day
Emission days	: 365
Conditions and measures related to sewage treatment plant	
STP type	: Onsite Sewage Treatment Plant
STP sludge treatment	: Controlled application of sewage sludge to agricultural soil
STP effluent	: 2.000 m3/d

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4.2.2. Control of worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Handle substance within a closed system. Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of one hand
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	
Product (article) characteristics	
Covers percentage substance in the product up to 5%.	

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Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use eye protection according to EN 166. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

4.2.4. Control of worker exposure: Industrial spraying (PROC7)

Product (article) characteristics	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h

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Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Use eye protection according to EN 166. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands Hands and upper wrists
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

4.2.5. Control of worker exposure: Treatment of articles by dipping and pouring (PROC13)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	

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Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with specific activity training. Use eye protection according to EN 166. Dermal - minimum efficiency of 95 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

4.3. Exposure estimation and reference to its source

4.3.1. Environmental release and exposure: Use at industrial site leading to inclusion into/onto article (ERC5)

Release route	Release rate	Release estimation method
Water	25 kg/day	Environmental Release Category (ERC)
Air	25 kg/day	Environmental Release Category (ERC)
Soil	1 %	Environmental Release Category (ERC)

Compartment	Exposure level	RCR
Freshwater	0,027 mg/L (EUSES)	0,446
Freshwater sediment	0,132 mg/kg dry weight (EUSES)	0,014
Sewage treatment plant	0,003 mg/L (EUSES)	0,01
Man via environment - Oral	0,862 mg/kg bw/day (EUSES)	0,121
Agricultural soil	0,224 mg/kg dry weight (EUSES)	0,606

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Marine water	0,0026 mg/L (EUSES)	0,435
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4.3.2. Worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	1 mg/m ³ (ECETOC TRA worker v3)	0,029
dermal	systemic	long-term	0,138 mg/kg bw/day (ECETOC TRA worker v3)	0,028
dermal	local	long-term	0,04 (ECETOC TRA worker v3)	0,014
dermal	local	short-term	0,04 (ECETOC TRA worker v3)	0,014
combined routes	systemic	long-term		0,056

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	5 mg/m ³ (ECETOC TRA worker v3)	0,143
dermal	systemic	long-term	0,274 mg/kg bw/day (ECETOC TRA worker v3)	0,055
dermal	local	long-term	0,04 (ECETOC TRA worker v3)	0,014
dermal	local	short-term	0,04 (ECETOC TRA worker v3)	0,014
combined routes	systemic	long-term		0,198

4.3.4. Worker exposure: Industrial spraying (PROC7)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	5,7 mg/m ³ (ECETOC TRA worker v3)	0,163
dermal	systemic	long-term	2,143 mg/kg bw/day (ECETOC TRA worker v3)	0,429

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dermal	local	long-term	0,1 (ECETOC TRA worker v3)	0,036
dermal	local	short-term	0,1 (ECETOC TRA worker v3)	0,036
combined routes	systemic	long-term		0,592

4.3.5. Worker exposure: Treatment of articles by dipping and pouring (PROC13)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0,5 mg/m ³ (ECETOC TRA worker v3)	0,014
dermal	systemic	long-term	0,685 mg/kg bw/day (ECETOC TRA worker v3)	0,137
dermal	local	long-term	0,1 (ECETOC TRA worker v3)	0,036
dermal	local	short-term	0,1 (ECETOC TRA worker v3)	0,036
combined routes	systemic	long-term		0,151

4.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

ECHA guidance for downstream users

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

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

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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ES5: Industrial use, Textile, Leather treatment products

5.1. Title section

Structured Short Title	: Use at industrial sites; Various products (PC23, PC34); Manufacture of textiles, leather, fur (SU5).
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Environment		
CS1	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)	
Worker		
CS2	Mixing or blending in batch processes	PROC5
CS3	Treatment by dipping and pouring	PROC13

5.2. Conditions of use affecting exposure

5.2.1. Control of environmental exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Product (article) characteristics		
Physical form of product	: Liquid	
Amount used, frequency and duration of use (or from service life)		
Daily amount for wide dispersive uses	: < 0,025 tonnes/day	
Emission days	: 365	
Conditions and measures related to sewage treatment plant		
STP type	: Onsite Sewage Treatment Plant	
STP sludge treatment	: Controlled application of sewage sludge to agricultural soil	
STP effluent	: 2.000 m3/d	

5.2.2. Control of worker exposure: Mixing or blending in batch processes (PROC5)

Product (article) characteristics
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Covers percentage substance in the product up to 100 %.	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Local exhaust ventilation Inhalation - minimum efficiency of 90 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use eye protection according to EN 166. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

5.2.3. Control of worker exposure: Treatment of articles by dipping and pouring (PROC13)

Product (article) characteristics	
Covers percentage substance in the product up to 5%.	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa

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Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

5.3. Exposure estimation and reference to its source

5.3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Release route	Release rate	Release estimation method
Water	25 kg/day	Environmental Release Category (ERC)
Air	0 kg/day	Environmental Release Category (ERC)
Soil	5 %	Environmental Release Category (ERC)

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Compartment	Exposure level	RCR
Freshwater	0,027 mg/L (EUSES)	0,446
Freshwater sediment	0,132 mg/kg dry weight (EUSES)	0,014
Sewage treatment plant	0,003 mg/L (EUSES)	0,01
Man via environment - Oral	0,575 mg/kg bw/day (EUSES)	0,081
Agricultural soil	0,224 mg/kg dry weight (EUSES)	0,606
Marine water	0,0026 mg/L (EUSES)	0,435

5.3.2. Worker exposure: Mixing or blending in batch processes (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	2,5 mg/m ³ (ECETOC TRA worker v3)	0,071
dermal	systemic	long-term	1,371 mg/kg bw/day (ECETOC TRA worker v3)	0,274
dermal	local	long-term	0,2 (ECETOC TRA worker v3)	0,071
dermal	local	short-term	0,2 (ECETOC TRA worker v3)	0,071
combined routes	systemic	long-term		0,346

5.3.3. Worker exposure: Treatment of articles by dipping and pouring (PROC13)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	1 mg/m ³ (ECETOC TRA worker v3)	0,029
dermal	systemic	long-term	0,548 mg/kg bw/day (ECETOC TRA worker v3)	0,11
dermal	local	long-term	0,08 (ECETOC TRA worker v3)	0,029
dermal	local	short-term	0,08 (ECETOC TRA worker v3)	0,029
combined routes	systemic	long-term		0,138

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5.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

ECHA guidance for downstream users

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

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

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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ES6: Industrial use of metal treatment products

6.1. Title section

Structured Short Title	: Use at industrial sites; Metal working fluids (PC25); Manufacture of fabricated metal products, except machinery and equipment (SU15).
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Environment		
CS1	Use of non-reactive processing aid at industrial site (no inclusion into or onto article)	ERC4
Worker		
CS2	Mixing or blending in batch processes	PROC5
CS3	Treatment by dipping and pouring	PROC13

6.2. Conditions of use affecting exposure

6.2.1. Control of environmental exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Product (article) characteristics	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Daily amount for wide dispersive uses	: < 0,025 tonnes/day
Emission days	: 365
Conditions and measures related to sewage treatment plant	
STP type	: Onsite Sewage Treatment Plant
STP sludge treatment	: Controlled application of sewage sludge to agricultural soil
STP effluent	: 2.000 m3/d

6.2.2. Control of worker exposure: Mixing or blending in batch processes (PROC5)

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Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Local exhaust ventilation Inhalation - minimum efficiency of 90 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. Use eye protection according to EN 166. Dermal - minimum efficiency of 90 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

6.2.3. Control of worker exposure: Treatment of articles by dipping and pouring (PROC13)

Product (article) characteristics	
Covers percentage substance in the product up to 100 %.	

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Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

6.3. Exposure estimation and reference to its source

6.3.1. Environmental release and exposure: Use of non-reactive processing aid at industrial site (no inclusion into or onto article) (ERC4)

Release route	Release rate	Release estimation method
Water	25 kg/day	Environmental Release Category (ERC)
Air	0 kg/day	Environmental Release Category (ERC)

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Soil	5 %	Environmental Release Category (ERC)
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Compartment	Exposure level	RCR
Freshwater	0,027 mg/L (EUSES)	0,446
Freshwater sediment	0,132 mg/kg dry weight (EUSES)	0,014
Sewage treatment plant	0,003 mg/L (EUSES)	0,01
Man via environment - Oral	0,575 mg/kg bw/day (EUSES)	0,081
Agricultural soil	0,224 mg/kg dry weight (EUSES)	0,606
Marine water	0,0026 mg/L (EUSES)	0,435

6.3.2. Worker exposure: Mixing or blending in batch processes (PROC5)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	2,5 mg/m ³ (ECETOC TRA worker v3)	0,071
dermal	systemic	long-term	1,371 mg/kg bw/day (ECETOC TRA worker v3)	0,274
dermal	local	long-term	0,2 (ECETOC TRA worker v3)	0,071
dermal	local	short-term	0,2 (ECETOC TRA worker v3)	0,071
combined routes	systemic	long-term		0,346

6.3.3. Worker exposure: Treatment of articles by dipping and pouring (PROC13)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	5 mg/m ³ (ECETOC TRA worker v3)	0,143
dermal	systemic	long-term	2,742 mg/kg bw/day (ECETOC TRA worker v3)	0,11
dermal	local	long-term	0,4 (ECETOC TRA worker v3)	0,143
dermal	local	short-term	0,4 (ECETOC TRA worker v3)	0,143
combined routes	systemic	long-term		0,691

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6.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

ECHA guidance for downstream users

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

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

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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ES7: Professional use, Washing and cleaning products, Biocidal products

7.1. Title section

Structured Short Title	: Widespread use by professional workers; Various products (PC35, PC8); Professional uses (SU22).
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Environment		
CS1	Indoor use, Open systems	ERC8a
Worker		
CS2	Transfer of substance or mixture (charging/discharging) at non dedicated-facilities	PROC8a
CS3	Transfer of substance or mixture (charging/discharging) at non dedicated-facilities	PROC8a
CS4	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions	PROC1
CS5	Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition	PROC3
CS6	Chemical production where opportunity for exposure arises	PROC4
CS7	Spraying	PROC11
CS8	Professional application of coatings and inks by brush or roller	PROC10
CS9	Treatment by dipping and pouring	PROC13

7.2. Conditions of use affecting exposure

7.2.1. Control of environmental exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Product (article) characteristics	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Daily amount for wide dispersive uses	: 0,14 kg
Emission days	: 365

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Conditions and measures related to sewage treatment plant

STP type : Municipal Sewage Treatment Plant

7.2.2. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Product (article) characteristics

Covers concentrations up to 20 %

Physical form of product : Liquid

Vapour pressure : 0,0037 Pa

Amount used, frequency and duration of use (or from service life)

Duration : Frequency and duration of use < 1 h

Technical and organisational conditions and measures

Ensure operatives are trained to minimise exposures.
Provide a basic standard of general ventilation (1 to 3 air changes per hour).

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

Wear suitable gloves tested to EN374.
Use eye protection according to EN 166.
Dermal - minimum efficiency of 80 %

Other conditions affecting workers exposure

Body parts exposed : Palm of both hands

Indoor or outdoor use : Indoor use

Professional or industrial settings : Industrial use

Ventilation rate per hour : 1 - 3

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.
Assumes a good basic standard of occupational hygiene is implemented
For further specification, refer to section 8 of the SDS.

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7.2.3. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Product (article) characteristics	
Covers percentage substance in the product up to 1 %.	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures. Provide a basic standard of general ventilation (1 to 3 air changes per hour).	
Conditions and measures related to personal protection, hygiene and health evaluation	
Use eye protection according to EN 166. Dermal - minimum efficiency of 0 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

7.2.4. Control of worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Product (article) characteristics	
Covers concentrations up to 20 %	

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Physical form of product	: Liquid
Vapour pressure	: 0,001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Handle substance within a closed system. Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour). Inhalation - minimum efficiency of 0 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of one hand
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Professional use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

7.2.5. Control of worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Product (article) characteristics	
Covers concentrations up to 20 %	
Physical form of product	: Liquid
Vapour pressure	: 0,0001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h

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Technical and organisational conditions and measures	
Handle substance within a closed system. Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour). Inhalation - minimum efficiency of 0 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Use eye protection according to EN 166. Dermal - minimum efficiency of 0 % Inhalation - minimum efficiency of 0 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of one hand
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Industrial use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

7.2.6. Control of worker exposure: Chemical production where opportunity for exposure arises (PROC4)

Product (article) characteristics	
Covers concentrations up to 20 %	
Physical form of product	: Liquid
Vapour pressure	: 0,001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 4 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	

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Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Inhalation - minimum efficiency of 0 %

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

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Use eye protection according to EN 166.
Dermal - minimum efficiency of 90 %
Inhalation - minimum efficiency of 0 %

Other conditions affecting workers exposure

Body parts exposed : Palm of one hand

Indoor or outdoor use : Indoor use

Professional or industrial settings : Professional use

Ventilation rate per hour : 1 - 3

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.
Assumes a good basic standard of occupational hygiene is implemented
For further specification, refer to section 8 of the SDS.

7.2.7. Control of worker exposure: Non-industrial spraying (PROC11)

Product (article) characteristics

Covers concentrations up to 20 %

Physical form of product : Liquid

Vapour pressure : 0,001 Pa

Amount used, frequency and duration of use (or from service life)

Duration : Frequency and duration of use < 8 h

Technical and organisational conditions and measures

Ensure operatives are trained to minimise exposures.

Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Inhalation - minimum efficiency of 0 %

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

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Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 % Inhalation - minimum efficiency of 0 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palms of both hands (480 cm ²) Hands and upper wrists
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Professional use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

7.2.8. Control of worker exposure: Roller application or brushing (PROC10)

Product (article) characteristics	
Covers concentrations up to 20 %	
Physical form of product	: Liquid
Vapour pressure	: 0,001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour). Inhalation - minimum efficiency of 0 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 % Inhalation - minimum efficiency of 0 %	

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Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Professional use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

7.2.9. Control of worker exposure: Treatment of articles by dipping and pouring (PROC13)

Product (article) characteristics	
Covers concentrations up to 20 %	
Physical form of product	: Liquid
Vapour pressure	: 0,001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 1 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour). Inhalation - minimum efficiency of 0 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 % Inhalation - minimum efficiency of 0 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use

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Professional or industrial settings	: Professional use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

7.3. Exposure estimation and reference to its source

7.3.1. Environmental release and exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Release route	Release rate	Release estimation method
Water	0,715 kg/day	Environmental Release Category (ERC)
Air	0 kg/day	Environmental Release Category (ERC)
Soil	5 %	Environmental Release Category (ERC)

Compartment	Exposure level	RCR
Freshwater	0,023 mg/L (EUSES)	0,385
Freshwater sediment	0,114 mg/kg dry weight (EUSES)	0,012
Sewage treatment plant	0,003 mg/L (EUSES)	0,01
Man via environment - Oral	0,037 mg/kg bw/day (EUSES)	0,01
Agricultural soil	0,224 mg/kg dry weight (EUSES)	0,024
Marine water	0,0025 mg/L (EUSES)	0,374

7.3.2. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	6 mg/m ³ (ECETOC TRA worker v3)	0,171
dermal	systemic	long-term	0,645 mg/kg	0,329

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			bw/day (ECETOC TRA worker v3)	
dermal	local	long-term	0,12 (ECETOC TRA worker v3)	0,043
dermal	local	short-term	0,12 (ECETOC TRA worker v3)	0,043
combined routes	systemic	long-term		0,501

7.3.3. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	6 mg/m ³ (ECETOC TRA worker v3)	0,171
dermal	systemic	long-term	3,63 mg/kg bw/day (ECETOC TRA worker v3)	0,726
dermal	local	long-term	0,6 (ECETOC TRA worker v3)	0,214
dermal	local	short-term	0,6 (ECETOC TRA worker v3)	0,214
combined routes	systemic	long-term		0,897

7.3.4. Worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0,06 mg/m ³ (ECETOC TRA worker v3)	< 0,01
dermal	systemic	long-term	0,02 mg/kg bw/day (ECETOC TRA worker v3)	< 0,01
dermal	local	long-term	0,01 (ECETOC TRA worker v3)	< 0,01
dermal	local	short-term	0,01 (ECETOC TRA worker v3)	< 0,01
combined routes	systemic	long-term		< 0,01

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7.3.5. Worker exposure: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition (PROC3)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	3 mg/m ³ (ECETOC TRA worker v3)	0,086
dermal	systemic	long-term	0,414 mg/kg bw/day (ECETOC TRA worker v3)	0,083
dermal	local	long-term	0,121 (ECETOC TRA worker v3)	0,043
dermal	local	short-term	0,121 (ECETOC TRA worker v3)	0,043
combined routes	systemic	long-term		0,169

7.3.6. Worker exposure: Chemical production where opportunity for exposure arises (PROC4)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	18 mg/m ³ (ECETOC TRA worker v3)	0,514
dermal	systemic	long-term	0,412 mg/kg bw/day (ECETOC TRA worker v3)	0,082
dermal	local	long-term	0,06 (ECETOC TRA worker v3)	0,021
dermal	local	short-term	0,06 (ECETOC TRA worker v3)	0,021
combined routes	systemic	long-term		0,597

7.3.7. Worker exposure: Non-industrial spraying (PROC11)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	12 mg/m ³ (ECETOC TRA worker v3)	0,343
dermal	systemic	long-term	0,412 mg/kg bw/day (ECETOC TRA worker v3)	0,33
dermal	local	long-term	0,06 (ECETOC	0,214

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			TRA worker v3)	
dermal	local	short-term	0,06 (ECETOC TRA worker v3)	0,214
combined routes	systemic	long-term		0,673

7.3.8. Worker exposure: Roller application or brushing (PROC10)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	1,2 mg/m ³ (ECETOC TRA worker v3)	0,034
dermal	systemic	long-term	3,292 mg/kg bw/day (ECETOC TRA worker v3)	0,658
dermal	local	long-term	0,24 (ECETOC TRA worker v3)	0,086
dermal	local	short-term	0,24 (ECETOC TRA worker v3)	0,086
combined routes	systemic	long-term		0,693

7.3.9. Worker exposure: Treatment of articles by dipping and pouring (PROC13)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0,6 mg/m ³ (ECETOC TRA worker v3)	0,017
dermal	systemic	long-term	1,645 mg/kg bw/day (ECETOC TRA worker v3)	0,329
dermal	local	long-term	0,24 (ECETOC TRA worker v3)	0,086
dermal	local	short-term	0,24 (ECETOC TRA worker v3)	0,086
combined routes	systemic	long-term		0,346

7.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

ECHA guidance for downstream users

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

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus,

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scaling may be necessary to define appropriate site-specific risk management measures.
If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific
chemical safety assessment is required.

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ES8: Professional use, Polishes and wax blends

8.1. Title section

Structured Short Title	: Widespread use by professional workers; Polishes and wax blends (PC31); Professional uses (SU22).
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Environment		
CS1	Indoor use, Open systems	ERC8a
Worker		
CS2	Transfer of substance or mixture (charging/discharging) at non dedicated-facilities	PROC8a
CS3	Transfer of substance or mixture (charging/discharging) at non dedicated-facilities	PROC8a
CS4	Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions	PROC1
CS5	Chemical production where opportunity for exposure arises	PROC4
CS6	Professional application of coatings and inks by brush or roller	PROC10
CS7	Treatment by dipping and pouring	PROC13

8.2. Conditions of use affecting exposure

8.2.1. Control of environmental exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Product (article) characteristics	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Daily amount for wide dispersive uses	: 0,14 kg
Emission days	: 365
Conditions and measures related to sewage treatment plant	
STP type	: Municipal Sewage Treatment Plant

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8.2.2. Control of worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Product (article) characteristics	
Covers concentrations up to 20 %	
Physical form of product	: Liquid
Vapour pressure	: 0,0037 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 1 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures. Provide a basic standard of general ventilation (1 to 3 air changes per hour). Inhalation - minimum efficiency of 0 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 % Inhalation - minimum efficiency of 0 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Professional use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

8.2.3. Control of worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a)

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Product (article) characteristics	
Covers concentrations up to 20 %	
Physical form of product	: Liquid
Vapour pressure	: 0,001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 1 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures. Provide a basic standard of general ventilation (1 to 3 air changes per hour). Inhalation - minimum efficiency of 0 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Use eye protection according to EN 166. Dermal - minimum efficiency of 0 % Inhalation - minimum efficiency of 0 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Professional use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

8.2.4. Control of worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Product (article) characteristics	
Covers concentrations up to 20 %	
Physical form of product	: Liquid

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Vapour pressure	: 0,001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 8 h
Technical and organisational conditions and measures	
Handle substance within a closed system. Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour). Inhalation - minimum efficiency of 0 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of one hand
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Professional use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

8.2.5. Control of worker exposure: Chemical production where opportunity for exposure arises (PROC4)

Product (article) characteristics	
Covers concentrations up to 20 %	
Physical form of product	: Liquid
Vapour pressure	: 0,001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 4 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	

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Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Inhalation - minimum efficiency of 0 %

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

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.
Use eye protection according to EN 166.
Dermal - minimum efficiency of 90 %
Inhalation - minimum efficiency of 0 %

Other conditions affecting workers exposure

Body parts exposed : Palm of one hand

Indoor or outdoor use : Indoor use

Professional or industrial settings : Professional use

Ventilation rate per hour : 1 - 3

Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply

Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision.
Assumes a good basic standard of occupational hygiene is implemented
For further specification, refer to section 8 of the SDS.

8.2.6. Control of worker exposure: Roller application or brushing (PROC10)

Product (article) characteristics

Covers concentrations up to 20 %

Physical form of product : Liquid

Vapour pressure : 0,001 Pa

Amount used, frequency and duration of use (or from service life)

Duration : Frequency and duration of use < 8 h

Technical and organisational conditions and measures

Ensure operatives are trained to minimise exposures.

Provide a basic standard of general ventilation (1 to 3 air changes per hour).
Inhalation - minimum efficiency of 0 %

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

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Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 % Inhalation - minimum efficiency of 0 %	
Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Professional use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

8.2.7. Control of worker exposure: Treatment of articles by dipping and pouring (PROC13)

Product (article) characteristics	
Covers concentrations up to 20 %	
Physical form of product	: Liquid
Vapour pressure	: 0,001 Pa
Amount used, frequency and duration of use (or from service life)	
Duration	: Frequency and duration of use < 1 h
Technical and organisational conditions and measures	
Ensure operatives are trained to minimise exposures.	
Provide a basic standard of general ventilation (1 to 3 air changes per hour). Inhalation - minimum efficiency of 0 %	
Conditions and measures related to personal protection, hygiene and health evaluation	
Wear suitable gloves tested to EN374. Use eye protection according to EN 166. Dermal - minimum efficiency of 80 % Inhalation - minimum efficiency of 0 %	

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Other conditions affecting workers exposure	
Body parts exposed	: Palm of both hands
Indoor or outdoor use	: Indoor use
Professional or industrial settings	: Professional use
Ventilation rate per hour	: 1 - 3
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply	
Assumes that activities are undertaken with appropriate and well maintained equipment by trained personnel operating under supervision. Assumes a good basic standard of occupational hygiene is implemented For further specification, refer to section 8 of the SDS.	

8.3. Exposure estimation and reference to its source

8.3.1. Environmental release and exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Release route	Release rate	Release estimation method
Water	0,138 kg/day	Environmental Release Category (ERC)
Air	0 kg/day	Environmental Release Category (ERC)
Soil	0 %	Environmental Release Category (ERC)

Compartment	Exposure level	RCR
Freshwater	0,023 mg/L (EUSES)	0,384
Freshwater sediment	0,114 mg/kg dry weight (EUSES)	0,012
Sewage treatment plant	0,003 mg/L (EUSES)	0,01
Man via environment - Oral	0,037 mg/kg bw/day (EUSES)	0,01
Agricultural soil	0,094 mg/kg dry weight (EUSES)	0,01
Marine water	0,0024 mg/L (EUSES)	0,373

8.3.2. Worker exposure: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities (PROC8a)

Exposure route	Health effect	Exposure	Exposure level	RCR
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		indicator		
inhalative	systemic	long-term	6 mg/m ³ (ECETOC TRA worker v3)	0,171
dermal	systemic	long-term	1,645 mg/kg bw/day (ECETOC TRA worker v3)	0,329
dermal	local	long-term	0,12 (ECETOC TRA worker v3)	0,043
dermal	local	short-term	0,12 (ECETOC TRA worker v3)	0,043
combined routes	systemic	long-term		0,501

8.3.3. Worker exposure: Transfer of substance or mixture (charging/discharging) at non dedicated-facilities (PROC8a)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	6 mg/m ³ (ECETOC TRA worker v3)	0,171
dermal	systemic	long-term	3,63 mg/kg bw/day (ECETOC TRA worker v3)	0,726
dermal	local	long-term	0,6 (ECETOC TRA worker v3)	0,214
dermal	local	short-term	0,6 (ECETOC TRA worker v3)	0,214
combined routes	systemic	long-term		0,897

8.3.4. Worker exposure: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions (PROC1)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0,06 mg/m ³ (ECETOC TRA worker v3)	< 0,01
dermal	systemic	long-term	0,02 mg/kg bw/day (ECETOC TRA worker v3)	< 0,01
dermal	local	long-term	0,01 (ECETOC TRA worker v3)	< 0,01
dermal	local	short-term	0,01 (ECETOC	< 0,01

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			TRA worker v3)	
combined routes	systemic	long-term		< 0,01

8.3.5. Worker exposure: Chemical production where opportunity for exposure arises (PROC4)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	18 mg/m ³ (ECETOC TRA worker v3)	0,514
dermal	systemic	long-term	0,412 mg/kg bw/day (ECETOC TRA worker v3)	0,082
dermal	local	long-term	0,06 (ECETOC TRA worker v3)	0,021
dermal	local	short-term	0,06 (ECETOC TRA worker v3)	0,021
combined routes	systemic	long-term		0,597

8.3.6. Worker exposure: Roller application or brushing (PROC10)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	1,2 mg/m ³ (ECETOC TRA worker v3)	0,034
dermal	systemic	long-term	3,292 mg/kg bw/day (ECETOC TRA worker v3)	0,658
dermal	local	long-term	0,24 (ECETOC TRA worker v3)	0,086
dermal	local	short-term	0,24 (ECETOC TRA worker v3)	0,086
combined routes	systemic	long-term		0,693

8.3.7. Worker exposure: Treatment of articles by dipping and pouring (PROC13)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0,6 mg/m ³ (ECETOC TRA worker v3)	0,017
dermal	systemic	long-term	1,645 mg/kg	0,329

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			bw/day (ECETOC TRA worker v3)	
dermal	local	long-term	0,24 (ECETOC TRA worker v3)	0,086
dermal	local	short-term	0,24 (ECETOC TRA worker v3)	0,086
combined routes	systemic	long-term		0,346

8.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

ECHA guidance for downstream users

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

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

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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ES9: Hand dishwashing (liquid regular, liquid concentrate) for consumer use, Machine dishwashing (powder, liquid, tablet) for consumer use

9.1. Title section

Structured Short Title	: Consumer use; Washing and cleaning products (PC35); Consumer uses (SU21).
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Environment		
CS1	Indoor use, Open systems	ERC8a
Consumer		
CS2	Consumer use, Hand dishwashing liquids, Machine dishwashing products	PC35

9.2. Conditions of use affecting exposure

9.2.1. Control of environmental exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Product (article) characteristics	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Daily amount for wide dispersive uses	: 2,2 kg
Emission days	: 365

9.2.2. Control of consumer exposure: Washing and cleaning products (PC35)

Product (article) characteristics	
Covers concentrations up to 29 %	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Duration	: Use frequency

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Use frequency	: 3 uses per day
Conditions and measures related to personal protection, hygiene and health evaluation	
Keep away from children.	
Other conditions affecting consumers exposure	
Body parts exposed	: Assumes that potential dermal contact is limited to fingertips.
Indoor or outdoor use	: Indoor use

9.3. Exposure estimation and reference to its source

9.3.1. Environmental release and exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Release route	Release rate	Release estimation method
Water	2,2 kg/day	Environmental Release Category (ERC)
Air	100 %	Environmental Release Category (ERC)
Soil	100 %	Environmental Release Category (ERC)

Compartment	Exposure level	RCR
Freshwater	0,023 mg/L (EUSES)	0,389
Freshwater sediment	0,115 mg/kg dry weight (EUSES)	0,012
Sewage treatment plant	0,003 mg/L (EUSES)	0,01
Man via environment - Oral	0,037 mg/kg bw/day (EUSES)	0,01
Agricultural soil	0,559 mg/kg dry weight (EUSES)	0,059

9.3.2. Consumer exposure: Washing and cleaning products (PC35)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0 mg/m ³ (ECETOC TRA consumer v3)	0,01
dermal	systemic	long-term	0,003 mg/kg bw/day (AISE REACT)	0,01
oral	systemic	long-term	0,001 mg/kg	0,01

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			bw/day (AISE REACT)	
combined routes	systemic	long-term	0,01	

9.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

ECHA guidance for downstream users

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

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

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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ES10: Laundry regular (powder, liquid) for consumer use

10.1. Title section

Structured Short Title	: Consumer use; Washing and cleaning products (PC35); Consumer uses (SU21).
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Environment		
CS1	Indoor use, Open systems	ERC8a
Consumer		
CS2	Laundry regular (powder, liquid) for consumer use	PC35

10.2. Conditions of use affecting exposure

10.2.1. Control of environmental exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Product (article) characteristics	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Daily amount for wide dispersive uses	: 2,2 kg
Emission days	: 365

10.2.2. Control of consumer exposure: Washing and cleaning products (PC35)

Product (article) characteristics	
Covers concentrations up to 15 %	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Duration	: Use frequency
Use frequency	: 0,6 uses per day

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Conditions and measures related to personal protection, hygiene and health evaluation	
Keep away from children.	
Other conditions affecting consumers exposure	
Body parts exposed	: Both hands
Indoor or outdoor use	: Indoor use

10.3. Exposure estimation and reference to its source

10.3.1. Environmental release and exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Release route	Release rate	Release estimation method
Water	2,2 kg/day	Environmental Release Category (ERC)
Air	100 %	Environmental Release Category (ERC)
Soil	100 %	Environmental Release Category (ERC)

Compartment	Exposure level	RCR
Freshwater	0,023 mg/L (EUSES)	0,389
Freshwater sediment	0,115 mg/kg dry weight (EUSES)	0,012
Sewage treatment plant	0,003 mg/L (EUSES)	0,01
Man via environment - Oral	0,037 mg/kg bw/day (EUSES)	0,01
Agricultural soil	0,559 mg/kg dry weight (EUSES)	0,059

10.3.2. Consumer exposure: Washing and cleaning products (PC35)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0 mg/m ³ (ECETOC TRA consumer v3)	0,01
dermal	systemic	long-term	0,115 mg/kg bw/day (AISE REACT)	0,032
oral	systemic	long-term	0 mg/kg bw/day (ECETOC TRA)	0,01

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			consumer v3)	
combined routes	systemic	long-term		0,032

10.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

ECHA guidance for downstream users

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

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

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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ES11: Consumer use, Cleaning agent

11.1. Title section

Structured Short Title	: Consumer use; Washing and cleaning products (PC35); Consumer uses (SU21).
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Environment		
CS1	Indoor use, Open systems	ERC8a
Consumer		
CS2	Consumer use, Washing and cleaning products	PC35

11.2. Conditions of use affecting exposure

11.2.1. Control of environmental exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Product (article) characteristics	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Daily amount for wide dispersive uses	: 2,2 kg
Emission days	: 365

11.2.2. Control of consumer exposure: Washing and cleaning products (PC35)

Product (article) characteristics	
Covers concentrations up to 2 %	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Duration	: Use frequency
Use frequency	: 1 uses per day

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Conditions and measures related to personal protection, hygiene and health evaluation	
Keep away from children.	
Other conditions affecting consumers exposure	
Body parts exposed	: Hands and forearms
Indoor or outdoor use	: Indoor use

11.3. Exposure estimation and reference to its source

11.3.1. Environmental release and exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Release route	Release rate	Release estimation method
Water	2,2 kg/day	Environmental Release Category (ERC)
Air	100 %	Environmental Release Category (ERC)
Soil	100 %	Environmental Release Category (ERC)

Compartment	Exposure level	RCR
Freshwater	0,023 mg/L (EUSES)	0,389
Freshwater sediment	0,115 mg/kg dry weight (EUSES)	0,012
Sewage treatment plant	0,003 mg/L (EUSES)	0,01
Man via environment - Oral	0,037 mg/kg bw/day (EUSES)	0,01
Agricultural soil	0,559 mg/kg dry weight (EUSES)	0,059

11.3.2. Consumer exposure: Washing and cleaning products (PC35)

Exposure route	Health effect	Exposure indicator	Exposure level	RCR
inhalative	systemic	long-term	0 mg/m ³ (ECETOC TRA consumer v3)	0,01
dermal	systemic	long-term	0,01 mg/kg bw/day (AISE REACT)	0,01
oral	systemic	long-term	0 mg/kg bw/day (ECETOC TRA consumer v3)	0,01

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combined routes	systemic	long-term		0,01
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11.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

ECHA guidance for downstream users

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

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

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

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ES12: Consumer use, Cosmetics, personal care products

12.1. Title section

Structured Short Title	: Consumer use; Cosmetics, personal care products (PC39); Consumer uses (SU21).
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Environment		
CS1	Indoor use, Open systems	ERC8a
Consumer		
CS2	Consumer use, Cosmetics, personal care products	PC39

12.2. Conditions of use affecting exposure

12.2.1. Control of environmental exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Product (article) characteristics	
Physical form of product	: Liquid
Amount used, frequency and duration of use (or from service life)	
Daily amount for wide dispersive uses	: 0,72 kg
Emission days	: 365

12.2.2. Control of consumer exposure: Cosmetics, personal care products (PC39)

Conditions and measures related to personal protection, hygiene and health evaluation
No specific measures identified.

12.3. Exposure estimation and reference to its source

12.3.1. Environmental release and exposure: Wide dispersive indoor use of processing aids in open systems (ERC8a)

Release route	Release rate	Release estimation method
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Water	0,715 kg/day	Environmental Release Category (ERC)
Air	100 %	Environmental Release Category (ERC)
Soil	100 %	Environmental Release Category (ERC)

Compartment	Exposure level	RCR
Freshwater	0,023 mg/L (EUSES)	0,385
Freshwater sediment	0,114 mg/kg dry weight (EUSES)	0,012
Sewage treatment plant	0,001 mg/L (EUSES)	0,01
Man via environment - Oral	0,037 mg/kg bw/day (EUSES)	0,01
Agricultural soil	0,224 mg/kg dry weight (EUSES)	0,024

12.3.2. Consumer exposure: Cosmetics, personal care products (PC39)

Additional information on exposure estimation

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.

12.4. Guidance to DU to evaluate whether he works inside the boundaries set by the ES

ECHA guidance for downstream users

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

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

If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.