

Safety Data Sheet according to Regulation (EC) 1907/2006 (REACH)

Revision date: 2020-01-16 Supercedes: 2019-01-09

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

1.1. Product identifier:	
Product trade name: Company product number: REACH registration number: Substance name: Substance identification number: Other means of identification:	Kalama* Benzyl Benzoate USP/FCC BOB 01-2119976371-33-0013 Benzyl benzoate EC 204-402-9 Not Available
1.2. Relevant identified uses of the substance of	r mixture and uses advised against:
Uses:	Fixing agent. Intermediate. Laboratory chemical. Odour agent. Processing aid. Solvent. Viscosity adjuster. Impregnating agent. See Annex for covered uses.
Uses advised against:	None identified
1.3. Details of the supplier of the safety data she	eet:
Manufacturer/Supplier:	Emerald Performance Materials, LLC Emerald Kalama Chemical, LLC 1296 NW Third Street Kalama, WA 98625 United States Telephone: +1-360-673-2550
EU Only Representative:	1499 SE Tech Center Place, Suite 300 Vancouver, WA 98683 United States Telephone: +1-360-954-7100 Penman Consulting bvba Avenue des Arts 10 B-1210 Brussels
For further information about this SDS:	Belgium Telephone: +32 (0) 2 305 0698 email: pcbvba09@penmanconsulting.com Email: product.compliance@emeraldmaterials.com
1.4. Emergency telephone number:	
	ChemTel (24 hours): 1-800-255-3924 (USA); +1-813-248-0585 (outside USA); 1-300-954-583 (Australia): 000-800-100-4086 (India)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture:

Product classification according to Regulation (EC) 1272/2008 (CLP) as amended:

Acute Toxicity, Oral, category 4, H302 Hazardous to the aquatic environment, Acute, category 1, H400 Hazardous to the aquatic environment, Chronic, category 2, H411

2.2. Label elements:

Product labeling according to Regulation (EC) 1272/2008 (CLP) as amended: Hazard pictogram(s):



Signal word: Warning Hazard statements: H302 Harmful if swallowed. H400 Very toxic to aquatic life. H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P264 Wash skin thoroughly after handling.

P273 Avoid release to the environment.

P301+P312 IF SWALLOWED: Call a POISON CENTRE/doctor if you feel unwell.

P391 Collect spillage. Supplemental information:

No Additional Information

Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labelling of Chemicals (GHS) - Annex III and ECHA Guidance on Labelling and Packaging. Regulations in individual countries/regions may determine which statements are required on the product label. See product label for specifics.

2.3. Other hazards:

PBT/vPvB criteria: Other hazards:

This product does not meet the PBT and vPvB classification criteria. No Additional Information

See Section 11 for toxicological information.

SECTION 3: Composition/information on ingredients

3.1. Substance:

CAS-No.	Chemical Name	<u>Weight%</u>	<u>Classification</u>	H Statements
000120-51-4	Benzyl benzoate	99-100	Acute Tox. 4 Oral- Aquatic Acute 1- Aquatic Chronic 2	H302-400-411
CAS-No.	Chemical Name	<u>Weight%</u>	REACH Registration No.	EC/List Number
000120-51-4	Benzyl benzoate	99-100	01-2119976371-33-0013	204-402-9

See Section 16 for full text of H (Hazard) statements (EC 1272/2008).

Amounts specified are typical and do not represent a specification. Remaining components are proprietary, non-hazardous, and/or present at amounts below reportable limits.

SECTION 4: First aid measures

4.1. Description of first aid measures:

General: If irritation or other symptoms occur or persist from any route of exposure, remove the affected individual from the area: see a physician/get medical attention.

Eye contact: Any material that contacts the eye should be washed out immediately with water. Get medical attention if symptoms occur.

Skin contact: Immediately remove contaminated clothing and shoes. Wash the affected area with plenty of soap and water until no evidence of the chemical remains (at least 15-20 minutes). Launder clothing before reuse. If skin irritation occurs: Get medical advice/attention.

Inhalation: If affected, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Call a POISON CENTER or doctor/physician if you feel unwell.

Ingestion: Do not induce vomiting. Never give anything by mouth to an unconscious person. Rinse out the mouth with water. Get medical attention immediately.

Protection of first aid responders: Wear proper personal protective clothing and equipment.

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

Irritation. Pre-existing skin problems may be aggravated by prolonged or repeated contact. See section 11 for additional information.

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

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media:

Suitable: Use water spray, ABC dry chemical, foam or carbon dioxide. Water or foam may cause frothing. Use water to keep fire-exposed containers cool. Water spray may be used to flush spills away from exposures.

Unsuitable: Do not use direct water stream. May spread fire.

5.2. Special hazards arising from the substance or mixture:

Unusual fire/explosion hazards: Product is not considered a fire hazard, but will burn if ignited. Closed container may rupture (due to build up in pressure) when exposed to extreme heat.

Hazardous combustion products: Irritating or toxic substances may be emitted upon burning, combustion or decomposition. See section 10 (10.6 Hazardous decomposition products) for additional information.

5.3. Advice for firefighters:

Wear self-contained breathing apparatus (SCBA) equipped with a full facepiece and operated in a pressure-demand mode (or other positive pressure mode) and approved protective clothing. Personnel without suitable respiratory protection must leave the area to prevent significant exposure to hazardous gases from combustion, burning or decomposition. In an enclosed or poorly ventilated area, wear SCBA during cleanup immediately after a fire as well as during the attack phase of firefighting operations.

See section 9 for additional information.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures:

See Section 8 for recommendations on the use of personal protective equipment. If spilled in an enclosed area, ventilate. Eliminate ignition sources. Personal Protective Equipment must be worn.

6.2. Environmental precautions:

Do not flush liquid into public sewer, water systems or surface waters.

6.3. Methods and material for containment and cleaning up:

Contain by diking with sand, earth or other non-combustible material. Wear proper personal protective clothing and equipment. Absorb spill with an inert material. Place into labeled, closed container; store in safe location to await disposal. Change contaminated clothing and launder before reuse.

6.4. References to other sections:

See Section 8 for recommendations on the use of personal protection and Section 13 for waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling:

As with any chemical product, use good laboratory/workplace procedures. Do not cut, puncture, or weld on or near the container. Do not ingest, taste, or swallow. Wash thoroughly after handling this product. Always wash up before eating, smoking or using the facilities. Use under well-ventilated conditions. Avoid eye and skin contact. Avoid inhalation of aerosol, mist, spray, fume or vapor. Wash contaminated clothing before reuse. Provide eyewash fountains and safety showers in the work area.

7.2. Conditions for safe storage, including any incompatibilities:

Store cool and dry, under well-ventilated conditions. Store this material away from incompatible substances (see section 10). Do not store in open, unlabeled or mislabeled containers. Keep container closed when not in use. Do not reuse empty

container without commercial cleaning or reconditioning. Empty container contains residual product which may exhibit hazards of product. Product can easily oxidize. It is recommended that opened containers be padded with nitrogen. Protect from light.

7.3. Specific end use(s):

Further information concerning special risk management measures: see annex of this safety data sheet (exposure scenarios).

SECTION 8: Exposure controls / personal protection

8.1. Control parameters:

Chemical Name Benzyl benzoate	<u>EU OELV</u> N/E	<u>EU IOELV</u> N/E	ACGIH - TWA/Ceiling N/E	<u>ACGIH - STEL</u> N/E
Chemical Name Benzyl benzoate	<u>UK WEL</u> N/E	<u>Ireland OEL</u> N/E		

N/E=Not established (no exposure limits established for the listed substances for listed country/region/organization).

Derived No Effect Levels (DNELs):

Benzy	l benzoate

Population	Route	Acute (local)	Acute (systemic)	Long Term (local)	Long Term (systemic)
Workers	Inhalation	N/E	102 mg/m3	N/E	5,1 mg/m3
Workers	Dermal	N/E	N/E	N/E	2,6 mg/kg bw/day
General population	Inhalation	N/E	25 mg/m3	N/E	1,25 mg/m3
General population	Dermal	N/E	N/E	N/E	1,3 mg/kg bw/day
General population	Oral	N/E	78 mg/kg bw/day	N/E	0,4 mg/kg bw/day
Humans via the environment	Inhalation	N/E	N/E	N/E	1,25 mg/m3
Humans via the environment	Oral	N/E	N/E	N/E	0,4 mg/kg bw/day

Predicted No Effect Concentration (PNECs):

<u>Benzyl benzoate</u>	
Compartment	PNEC
Freshwater	0,0168 mg/L
Freshwater sediment	10,66 mg/kg dw
Marine water	0,00168 mg/L
Marine water sediment	1,07 mg/kg dw
Soil	2,12 mg/kg dw
STP	100 mg/L
Oral	No potential for bioaccumulation

N/E=Not established; N/A=Not applicable (not required); bw=body weight; dw=dry weight; ww=wet weight.

8.2. Exposure controls:

Appropriate engineering controls: Always provide effective general and, when necessary, local exhaust ventilation to draw spray, aerosol, fume, mist and vapor away from workers to prevent routine inhalation. Ventilation must be adequate to maintain the ambient workplace atmosphere below the exposure limit(s) outlined in the SDS.

Individual protection measures, such as personal protective equipment:

Eye/face protection: Wear eye protection.

Hand protection: Avoid skin contact when mixing or handling the material by wearing impervious and chemical resistant gloves. In case of prolonged immersion or frequently repeated contact, gloves with breakthrough times greater than 240 minutes (protection class 5 or greater) are recommended. For brief contact or splash applications, gloves with breakthrough times of 10 minutes or greater are recommended (protection class 1 or greater). The protective gloves to be used must comply with the specifications of the EC directive 89/686/EEC and the resultant standard EN 374. Suitability and durability of a glove is dependent on usage (e.g. frequency and duration of contact, other chemicals which may be handled, chemical resistance of glove material and dexterity). Always seek advice of the glove supplier as to the most suitable glove material.

Skin and body protection: Use good laboratory/workplace procedures including personal protective clothing: labcoat, safety glasses and protective gloves.

Respiratory protection: Wear an approved respirator (e.g., an organic vapor respirator, a full face air purifying respirator for organic vapors, or a self-contained breathing apparatus) whenever exposure to aerosol, mist, spray, fume or vapor exceed the applicable exposure limit(s) of any chemical substance listed in this SDS.

Further information: Eyewash fountains and safety showers are recommended in the work area.

Environmental exposure controls: See Sections 6 and 12.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties:

Form:	Liquid	pH:	Not Available
Appearance:	Colorless	Relative density:	1.116-1.120
Odour:	Slight	Partition coefficient (n- octanol/water):	3.97
Odour threshold:	Not Available	% Volatile by weight:	<15%
Solubility in water:	15.3 mg/L @ 20°C	VOC:	<15% ASTM D2369
Evaporation rate:	<1	Boiling point °C:	323 °C
Vapour pressure:	0.0305 Pa @ 25 °C	Boiling point °F:	614 °F
Vapour density:	7.3 (Air=1)	Flash point:	148 °C (298 °F) Closed Cup
Viscosity:	Not Available	Autoignition temperature:	480 °C (896 °F)
Melting point/Freezing point:	18-21 °C (64-70 °F) (solidification point)	Flammability (solid, gas):	Not Applicable (liquid)
Oxidising properties:	Not oxidizing	Flammability or explosive limits:	LFL/LEL: Not Available
Explosive properties:	Not explosive		UFL/UEL: Not Available
Decomposition temperature:	Not Available	Surface tension:	

9.2. Other information:

Amounts specified are typical and do not represent a specification.

SECTION 10: Stability and reactivity

10.1. Reactivity:

None known.

10.2. Chemical stability:

This product is stable.

10.3. Possibility of hazardous reactions:

Hazardous polymerization will not occur.

10.4. Conditions to avoid:

Excessive heat and ignition sources.

10.5. Incompatible materials:

Avoid contact with strong oxidizing agents.

10.6. Hazardous decomposition products:

Carbon dioxide and carbon monoxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects:

Information on likely routes of exposure:

General: Caution must be exercised through the prudent use of protective equipment and handling procedures to minimize exposure.

Eyes: May cause eye irritation.

Skin: May be harmful in contact with skin. Repeated or prolonged skin contact may cause irritation.

Inhalation: Inhalation may cause irritation of the respiratory tract and mucous membranes.

Ingestion: Harmful if swallowed. Ingestion may cause nausea, vomiting and diarrhea.

Acute toxicity information: Harmful if swallowed - Category 4.

	<u>Chemical Name</u> Benzyl benzoate	Inhalation LC50 >5.57 mg/L (similar materials, 4 hours)	<u>Species</u> Rat/ adult	<u>Oral LD50</u> 1160 mg/k	g	<u>Species</u> Rat/ adult	Dermal LD50 >2 mL/kg	<u>Species</u> Rabbit/ adult
Ski	n corrosion/irritation: Not classifie	ed (based on ava	ilable data, th	e classif	ication cr	iteria are not	met).	
	Chemical Name Benzyl benzoate	<u>Skin irritation</u> Non-irritant (OE	ECD 404)		<u>Species</u> Rabbit/ adul	lt		
Serious eye damage/irritation: Not classified (based on available data, the classification criteria are not met).								
	Chemical Name Benzyl benzoate	Eye irritation Slight irritant			<u>Species</u> Rabbit/ adul	lt		
Respiratory or skin sensitization: Not classified (based on available data, the classification criteria are not met).								
	Chemical Name Benzyl benzoate	<u>Skin sensitisati</u> Non-sensitizer	ion		<u>Species</u> Local Lympl	h Node Assay (Of	ECD 429)	
Car	Carcinogenicity: Not classified (no relevant information found).							

Germ cell mutagenicity: Not classified (based on available data, the classification criteria are not met). BENZYL BENZOATE: Mutagenicity was negative in in-vivo genotoxicity assays. Mixed results were seen in in-vitro genotoxicity assays.

Reproductive toxicity: Not classified (based on available data, the classification criteria are not met). BENZYL BENZOATE: Prenatal Developmental toxicity, oral, rat: NOAEL (no-observed-adverse-effect-level) of 646 mg/kg bw/day (maternal toxicity, embryo/fetal developmental toxicity).

Specific target organ toxicity (STOT) - single exposure: Not classified (no relevant information found).

Specific target organ toxicity (STOT) - repeated exposure: Not classified (based on available data, the classification criteria are not met). BENZYL BENZOATE: Repeated dose study, oral, rat: NOAEL (no-observed-adverse-effect-level) =800 mg/kg bw/day (systemic effects). Repeated dose study, dermal, rat: NOAEL (no-observed-adverse-effect-level) =781 mg/kg bw/day (systemic effects).

Aspiration hazard: Not classified (based on available data, the classification criteria are not met).

Other toxicity information: No additional information available.

SECTION 12: Ecological information

12.1. Toxicity:

	Chemical Name	Species	Acute	Acute	Chronic	
	Benzyl benzoate	Fish	LC50 2.32 mg/L (96 hours) (arithmetic mean measured)	N/E	ChV 0.237 mg/L (32 days) (calculated)	
	Benzyl benzoate	Invertebrates	EC50 3.09 mg/L (48 hours) (arithmetic mean measured)	N/E	NOEC 0.258 mg/L (21 days) (OECD 211)	
	Benzyl benzoate	Algae	EC50 0.475 mg/L (72 hours) (geometric mean measured)	N/E	NOEC 0.247 mg/L(72 hours) (geometric mean measured)	
	Benzyl benzoate	Micro-organisms	EC50 >10000 mg/L (3 hours)		(0)	
12.2.	12.2. Persistence and degradability:					
	Chemical NameBiodegradationBenzyl benzoateReadily biodegradable (EU method C4-D)					
12.3.	Bioaccumulative potential:					
	<u>Chemical Name</u> Benzyl benzoate	Biocor 193.4	ncentration Factor (BCF) L/kg (calculated)		<u>Log Kow</u> 3.97	
12.4.	Mobility in soil:					
	<u>Chemical Name</u> Benzyl benzoate	Mobili 6310 L	ty in soll (Koc/Kow) /kg (OECD 121)			

12.5. Results of PBT and vPvB assessment:

This product does not meet the PBT and vPvB classification criteria.

12.6. Other adverse effects:

No additional information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods:

Dispose of unused contents (incineration) in accordance with national and local regulations. Dispose of container in accordance with national and local regulations. Ensure the use of properly authorized waste management companies, where appropriate.

See Section 8 for recommendations on the use of personal protective equipment.

SECTION 14: Transport information

The information below is provided to assist in documentation. It may supplement the information on the package. The package in your possession may carry a different version of the label depending on the date of manufacture. Depending on inner packaging quantities and packaging instructions, it may be subject to specific regulatory exceptions.

14.1. UN number: UN3082

14.2. UN proper shipping name:

Environmentally hazardous substance, liquid, n.o.s. (Benzyl benzoate)

14.3. Transport hazard class(es):

U.S. DOT hazard class: N/A Canada TDG hazard class: N/A Europe ADR/RID hazard class: 9 IMDG Code (ocean) hazard class: 9 ICAO/IATA (air) hazard class: 9

A "N/A" listing for the hazard class indicates the product is not regulated for transport by that regulation.

14.4. Packing group: III

14.5. Environmental hazards:

Marine pollutant: Marine Pollutant (IMDG code 2.9.3). Hazardous substance (USA): Not Applicable

14.6. Special precautions for user:

Not Applicable

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code:

Not Applicable

Notes: For surface shipments within the United States: Not regulated.

SECTION 15: Regulatory information

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

Europe REACh (EC) 1907/2006: Applicable components are registered, exempt or otherwise compliant. REACh is only relevant to substances either manufactured or imported into the EU. Emerald Performance Materials has met its obligations under the REACh regulation. REACh information regarding this product is provided for informational purposes only. Each Legal Entity may have differing REACh obligations, depending on their place in the supply chain. For material manufactured outside of the EU, the importer of record must understand and meet their specific obligations under the regulation.

EU Authorizations and/or restrictions on use: Not Applicable

Other EU information: No Additional Information

National regulations: No Additional Information

Chemical inventories:

Regulation

Regulation	<u>Status</u>
Australian Inventory of Chemical Substances (AICS):	Y
Canadian Domestic Substances List (DSL):	Y
Canadian Non-Domestic Substances List (NDSL):	Ν
China Inventory of Existing Chemical Substances (IECSC):	Y
European EC Inventory (EINECS, ELINCS, NLP):	Y
Japan Existing and New Chemical Substances (ENCS):	Y
Japan Industrial Safety and Health Law (ISHL):	Y
Korean Existing and Evaluated Chemical Substances (KECL):	Y
New Zealand Inventory of Chemicals (NZIoC):	Y
Philippines Inventory of Chemicals and Chemical Substances (PICCS):	Y
Taiwan Inventory of Existing Chemicals:	Y
U.S. Toxic Substances Control Act (TSCA) (Active):	Y
A "Y" listing indicates all intentionally added components are either listed or are otherwise compliant with the regulation. A "N"	' listing indicates th

A "Y" listing indicates all intentionally added components are either listed or are otherwise compliant with the regulation. A "N" listing indicates that for one or more components: 1) there is no listing on the public inventory (or is not on the ACTIVE inventory for U.S. TSCA); 2) no information is available; or 3) the component has not been reviewed. A "Y" for New Zealand may mean that a qualified group standard may exist for the components in this product.

15.2. Chemical safety assessment:

A chemical safety assessment has been carried out for the substance or mixture.

SECTION 16: Other information

Hazard (H) Statements in the Composition section (Section 3):

H302	Harmful if swallowed.
H400	Very toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

Reason for revision: Changes in Section(s): 1, Annex

Evaulation method for classification of mixtures: Not Applicable (substance)

Legend:

* : Trademark owned by Emerald Performance Materials, LLC.
ACGIH: American Conference of Governmental Industrial Hygienists
EU OELV: European Union Occupational Exposure Limit Value
EU IOELV: European Union Indicative Occupational Exposure Limit Value
N/A: Not Applicable
N/E: None Established
STEL: Short Term Exposure Limit
TWA: Time Weighted Average (exposure for 8-hour workday)

Users Responsibility/Disclaimer of Liability:

The information set forth herein is based on our current knowledge, and is intended to describe the product solely with respect to health, safety and the environment. As such, it must not be interpreted as a guarantee of any specific property of the product. As a result, the customer shall be solely responsible for deciding whether said information is suitable and beneficial.

Safety Data Sheet Preparer: Product Compliance Department Emerald Performance Materials, LLC 1499 SE Tech Center Place, Suite 300 Vancouver, WA 98683 United States

Annex

Exposure Scenarios

Substance information:

Name of substance: Benzyl benzoate. EC# 204-402-9 / CAS# 120-51-4 REACH Registration number: 01-2119976371-33-0013

List of exposure scenarios:

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ES1: Use at industrial sites - Use as an intermediate
ES2: Formulation.
ES3: Use at industrial sites - Industrial use of washing and cleaning products
ES4: Use at industrial sites - Industrial manufacture of textiles, leather and fur
ES5: Use at industrial sites - Use as processing aid
ES6: Use by professional workers - Professional use of washing and cleaning products
ES7: Use by professional workers - Professional use of polishes and wax blends
ES8: Use by professional workers - Professional end-use of cosmetics
ES9: Consumer use - Consumer end-use of washing and cleaning products
ES10: Consumer use - Consumer end-use of air care products
ES11: Consumer use - Consumer end-use of polishes and wax blends
ES12: Consumer use - Consumer end-use of cosmetics

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General remarks:

The first tier environmental exposure assessments have at first instance been performed using CHESAR v2.1. Higher tier assessments have been performed for industrial uses using information from downstream users on use patterns along with air and water emission abatement measures. If needed, maximum permissible emissions were set to ensure there is no risk to the environment.

The worker dermal and inhalation exposure assessments for industrial and professional uses have been performed using ECETOC TRA Worker v3 model integrated in the Chemical Safety Assessment and Reporting tool (CHESAR v2.0.1) or the Advanced REACH tool (ART) v1.5. A qualitative risk assessment is required in respect of the following endpoints: local dermal effects (short and long term); systemic dermal effects (short term). In order to reduce the potential for dermal exposure, "low hazard" is assigned (according to ECHA CSA Guidance Part E Table E3-1). The following operational conditions (OC) and risk management measures (RMM) are recommended for substances considered to be "low hazard":

- Minimisation of manual phases/work tasks;
- Work procedures minimising splashes and spills;
- Avoidance of contact with contaminated tools and objects;
- Regular cleaning of equipment and work area;
- Management/supervision in place to check that the RMMs in place are being used correctly and OCs are followed;
- Training for staff on good practice
- Good standard of personal hygiene

- For tasks where potential splashes may arise, the following personal protective equipment is recommended: face shield, substance/task appropriate gloves and full skin coverage with appropriate light-weight barrier materials (e.g. coveralls).

The AISE REACT Consumer Tool or the ECETOC TRA 3 model (consumer module) have been used to assess consumer dermal, inhalation and oral exposures. The potential for dermal exposure for consumers is controlled through limiting the maximum concentration to 3% in consumer products as a consequence of its potential to cause local dermal effects.

Exposure scenario (1): Use at industrial sites - Use as an intermediate

1. Exposure scenario (1)

Short title of the exposure scenario:

Use at industrial sites - Use as an intermediate

List of use descriptors:

Sector of use category (SU): SU9 Product category (PC): PC19 Process category (PROC): PROC1, PROC2, PROC3, PROC4, PROC5, PROC8a, PROC8b, PROC9, PROC15 Environmental release category (ERC): ERC6a

List of names of contributing worker scenarios and corresponding PROCs:

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions.

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition.

PROC4 Chemical production where opportunity for exposure arises.

PROC5 Mixing or blending in batch processes. Covers mixing or blending of solid or liquid materials in the context of manufacturing or formulating sectors, as well as upon end use.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities. Transfer includes loading, filling, dumping, bagging and weighing.

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities. Transfer includes loading, filling, dumping, bagging. PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing). Filling lines specifically designed to both capture vapour and aerosol emissions and minimise spillage.

PROC15 Use as laboratory reagent. Use of substances at small scale laboratory (< 1 I or 1 kg present at workplace).

Name of contributing environmental scenario and corresponding ERCs:

ERC6a Use of intermediate.

Further explanations:

PC19 Intermediate.

For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/information_requirements_r12_en.pdf).

2. Conditions of use affecting exposure	
2.1 Control of workers exposure	
General:	Generally accepted standards of occupational hygiene are maintained. Smoking, eating and drinking are prohibited at the workplace. Spills are cleaned immediately. Local exhaust ventilation and gloves are considered.
Product characteristics:	Concentration of substance: Up to 100%. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C
Amounts used:	This information is not relevant for assessment of worker's exposure.
Frequency and duration of use/exposure:	Duration: - PROC1, PROC2, PROC3, PROC4, PROC5, PROC8b, PROC9, PROC15: <8 hours/day. - PROC8a: <1 hour/day.
Human factors not influenced by risk management:	Exposed skin surface: - PROC1, PROC3, PROC15: 240 cm2 (one hand, face side only). - PROC2, PROC4, PROC5, PROC9: 480 cm2 (two hands, face side only). - PROC8a, PROC8b: 960 cm2 (two hands).
Other given operational conditions affecting workers exposure:	Location: Indoor use. Domain: Industrial use. Process temperature (for liquid): <= 40 °C. Assessment tool used: ECETOC TRA Worker v3 for inhalation and dermal exposure.
Technical conditions and measures to control dispersion from source towards the worker:	 General ventilation: Basic general ventilation (1-3 air changes per hour): 0%. Containment: PROC1: Closed system (minimal contact during routine operations). PROC2: Closed continuous process with occasional controlled exposure. PROC3: Closed batch process with occasional controlled exposure. PROC4, PROC8b, PROC9: Semi-closed process with occasional controlled exposure. PROC5, PROC8a, PROC9: Semi-closed process with occasional controlled exposure. PROC5, PROC8a, PROC15: No. Local exhaust ventilation: PROC1: Not required. PROC2, PROC3, PROC4, PROC5, PROC8a, PROC9, PROC15: Yes (90% effectiveness). PROC8b: Yes (95% effectiveness). Local exhaust ventilation (for dermal): PROC1: Not required. PROC2, PROC3, PROC4, PROC5, PROC8a, PROC9, PROC15: Yes (90% effectiveness). PROC1: Not required. PROC2, PROC3, PROC4, PROC5, PROC8a, PROC9, PROC15: Yes (90% effectiveness). PROC1: Not required. PROC2: PROC3, PROC4, PROC5, PROC8a, PROC9, PROC15: Yes (90% effectiveness). PROC1: Not required. PROC2: PROC3, PROC4, PROC5, PROC8a, PROC9, PROC15: Yes (90% effectiveness). PROC2: PROC3, PROC4, PROC5, PROC8a, PROC9, PROC15: Yes (90% effectiveness).
Conditions and measures related to personal protection, hygiene and health evaluation:	Respiratory protection: Not required. Dermal protection: Yes (chemically resistant gloves conforming to EN374 with basic employee training) (minimum efficiency dermal: 90%).
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply:	Generally accepted standards of occupational hygiene are maintained. Minimisation of manual phases/work tasks. Minimisation of splashes and spills. Avoidance of contact with contaminated tools and objects. Regular cleaning of equipment and work area. Training staff on good practice. Management/supervision in place to check that RMMs in place are being used correctly and OCs followed. For tasks where potential splashes may arise, the following personal protective equipment is recommended: face shield, substance/task appropriate gloves and full skin coverage with appropriate light-weight barrier materials (e.g. coveralls).
General:	All risk management measures utilised must also comply with all relevant local regulations. On-site wastewater treatment required.

Product characteristics:	Phy	Physical state: liquid. Vapour pressure: 0.0305 Pa at					
Amounts used:		vimum daily u	ise at a site: 1 ton	(dav			
	Ma	ximum annua	l use at a site: 25	tons/vear			
	Per	Percentage of tonnage used at regional scale: 100 %.					
Environmental factors not influen management:	ced by risk Flow	Flow rate of receiving surface water: >=18,000 m3/day (default).					
Other given operational condition	is affecting Inde	oor use.					
environmental exposure:		ustrial use.	to				
	Rei	ease fraction	to air from proces	s (initial release): 0,0	JS; (final release): 0,05. Local release		
	Rel	ease fraction	to wastewater from	m process (initial rel	ease): 0.02: (final release): 0.001.		
	Loc	al release rat	e: 1 kg/day.	p (, -, -, -, -, -, -, -, -, -, -, -, -		
	Rel	ease fraction	to soil from proce	ss (final release): 0,0	001.		
Technical onsite conditions and r	measures to Dry	sludge applie	cation to agricultur	al soil: Yes (default)			
reduce or limit discharges, air en	nissions and On-	-site treatmen	t of wastewater: F	Removal of 95% of s	ubstance through 1) Organic phase		
releases to soll:	sep	aration and d	cinoration of collec	ted process and equ	lipment cleaning water followed by		
	wat	er (Effectiven	ess Water: 95%).		cied process and equipment cleaning		
Conditions and measures related	to municipal Mu	nicipal Sewag	e Treatment Plan	t (STP): Yes (Efficie	ency=90,9%).		
sewage treatment plant:	Size	e of municipa	l sewage system/t	reatment plant: >=2	000 m3/day (standard town).		
Conditions and measures related	to external Par	ticular consid	erations on the wa	aste treatment opera	tions: No (low risk) (ERC based		
treatment of waste for disposal:	ass was	essment derr ste life stage.	onstrating control Waste disposal a	of risk with default o //ccording to national	conditions. Low risk assumed for local legislation is sufficient.)		
Conditions and measures related	to external Exte	ernal recover	y and recycling of	waste should compl	y with applicable local and/or national		
recovery of waste:	reg	ulations.					
Additional good practice advice.	Obligations All	risk managen	nent measures util	ised must also comp	bly with all relevant local regulations.		
according to Article 37(4) of REA	CH do not						
Apply.	nco to ite source						
Health							
Information for contributing scenar	rio (1): PROC4. PRO	C5. PROC8a.	PROC9. PROC1	5			
Assessment method: ECETOC T	RA Worker v3. Only h	ighest figures	are presented he	ere.			
Exposure estimation:			·				
	Route	Exposure e	estimate	RCR	Notes		
Worker, long-term, systemic	Dermal	0,137 mg/k	g bw/day	0.053	PROC5, PROC8a		
Worker, long-term, systemic	Inhalation	4,422 mg/n	n3	0,867	PROC4, PROC5, PROC9, PROC15		
Worker, long-term, systemic	Combined routes	N/A		0,92	PROC5		
Worker, acute, systemic	Inhalation	35,37 mg/n	n3	0,347	PROC8a		
Worker, acute, systemic	Combined routes	N/A		0,347	PROC8a		
Environment							
Information for contributing scenar	rio (2): ERC6a						
Assessment method: CHESAR V2	2.1.						
Exposure estimation:							
<u>Compartment</u>	PEC		<u>RCR</u>	<u>Notes</u>			
Freshwater	0,005 mg/L		0,288				
Freshwater sediment	3,074 mg/kg dw		0,288				
Marine water	0,000483 mg/L		0,288				
Marine water sediment	0,306 mg/kg dw		0,286				
Soil	1,132 mg/kg dw		0,534				
STP	0,046 mg/L		<0,01				
Man via environment	0,0009593 mg/m3	/ 0,021 mg/	<0,01 / 0,052	Inhalation / Oral			
	KO DW/GAV						

RCR=Risk characterization ratio (PEC/PNEC or Exposure estimate/DNEL); PEC=Predicted environmental concentration.

4. Guidance to the Do	ownstream User to evaluate whether he works inside the boundaries set by the ES
Health:	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Indoor use, LEV used, with gloves, no respirator required. Duration: PROC1, PROC2, PROC3, PROC4, PROC5, PROC8b, PROC9, PROC15: <8 hours/day. PROC8a: <1 hour/day. Concentration of substance: Up to 100%.
Environment:	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.
Exposure scenario (2): Formulation
1. Exposure scenario	(2)

Short title of the exposure scenario:

Formulation

List of use descriptors:

Product category (PC): PC3, PC8, PC23, PC28, PC29, PC30, PC31, PC32, PC34, PC35, PC39

Process category (PROC): PROC1, PROC2, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15

Environmental release category (ERC): ERC2

List of names of contributing worker scenarios and corresponding PROCs:

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions.

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition.

PROC5 Mixing or blending in batch processes. Covers mixing or blending of solid or liquid materials in the context of manufacturing or formulating sectors, as well as upon end use.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities. Transfer includes loading, filling, dumping, bagging and weighing.

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities. Transfer includes loading, filling, dumping, bagging. PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing). Filling lines specifically designed to both capture vapour and aerosol emissions and minimise spillage.

PROC14 Tabletting, compression, extrusion, pelletisation, granulation. This covers processing of mixtures and/or substances into a defined shape for further use.

PROC15 Use as laboratory reagent. Use of substances at small scale laboratory (< 1 l or 1 kg present at workplace).

Name of contributing environmental scenario and corresponding ERCs:

ERC2 Formulation into mixture

Further explanations:

PC3 Air care products.

PC8 Biocidal products.

PC23 Leather treatment products.

PC28 Perfumes, fragrances.

PC29 Pharmaceuticals.

PC30 Photo-chemicals.

PC31 Polishes and wax blends.

PC32 Polymer preparations and compounds.

PC34 Textile dyes, and impregnating products.

PC35 Washing and cleaning products.

PC39 Cosmetics, personal care products.

For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R. 12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/information_requirements_r12_en.pdf).

2. Conditions of use affecting exposure

2.1 Control of workers exposure	
General:	Generally accepted standards of occupational hygiene are maintained. Smoking, eating and
	drinking are prohibited at the workplace. Spills are cleaned immediately. Local exhaust
	ventilation and gloves are considered.
Product characteristics:	Concentration of substance: Up to 100%.
	Physical state: liquid.
	Vapour pressure: 0,0305 Pa at 25 °C
Amounts used:	This information is not relevant for assessment of worker's exposure.

Frequency and duration of use/exposure:	Duration: - PROC1, PROC2, PROC3, PROC5, PROC8b, PROC9, PROC14, PROC15: <8 hours/day. - PROC8a: <1 hour/day.
Human factors not influenced by risk	Exposed skin surface:
management:	- PROC1, PROC3, PROC15: 240 cm2 (one hand, face side only).
-	- PROC2, PROC5, PROC9, PROC14: 480 cm2 (two hands, face side only).
	- PROC8a, PROC8b: 960 cm2 (two hands).
Other given operational conditions affecting	Location: Indoor use.
workers exposure:	Domain: Industrial use.
	Process temperature (for liquid): <= 40 °C.
	Assessment tool used: ECETOC TRA Worker v3 for inhalation and dermal exposure.
Technical conditions and measures to control	General ventilation: Basic general ventilation (1-3 air changes per hour): 0%.
dispersion from source towards the worker:	Containment:
	- PROC1: Closed system (minimal contact during routine operations).
	- PROC2: Closed continuous process with occasional controlled exposure.
	- PROU3: Closed batch process with occasional controlled exposure.
	- PROC8D, PROC9: Semi-closed process with occasional controlled exposure.
	- PRUC3, PRUC0a, PRUC 14, PRUC 15. NO.
	- PROC2_PROC3_PROC5_PROC8a_PROC9_PROC14_PROC15 ⁻ Yes (90%
	effectiveness).
	- PROC8b: Yes (95% effectiveness).
	Local exhaust ventilation (for dermal):
	- PROC1: Not required.
	- PROC2, PROC3, PROC5, PROC8a, PROC9, PROC14, PROC15: Yes (90%
	effectiveness).
	- PROC8b: Yes (95% effectiveness).
	Occupational Health and Safety Management System: Advanced.
Conditions and measures related to personal	Respiratory protection: Not required.
protection, hygiene and health evaluation:	Dermal protection: Yes (chemically resistant gloves conforming to EN374 with basic
	employee training) (minimum efficiency dermal: 90%).
Additional good practice advice. Obligations	Generally accepted standards of occupational hygiene are maintained.
according to Article 37(4) of REACH do not	Minimisation of manual phases/work tasks.
арріу:	Minimisation of splasnes and splits.
	Regular cleaning of equipment and work area
	Training staff on good practice
	Management/supervision in place to check that RMMs in place are being used correctly and
	OCs followed.
	For tasks where potential splashes may arise, the following personal protective equipment is
	recommended: face shield, substance/task appropriate gloves and full skin coverage with
	appropriate light-weight barrier materials (e.g. coveralls).
2.2 Control of environmental exposure	
General:	All risk management measures utilised must also comply with all relevant local regulations.
	On-site wastewater treatment required.
Product characteristics:	Physical state: liquid.
	Vapour pressure: 0,0305 Pa at 25 °C
Amounts used:	Maximum daily use at a site: 1 ton/day.
	Maximum annual use at a site: 100 tons/year.
	Percentage of tonnage used at regional scale: 100 %.
Frequency and duration of use:	Emission days: 100 days/year.
Environmental factors not influenced by risk	Flow rate of receiving surface water: >=18,000 m3/day (default).
management:	

Other given operational condition environmental exposure: Technical onsite conditions and n	perational conditions affecting l exposure: Indoor use. Industrial use. Release fraction to air from process (initial release): 0.025; (final release): 0.025. Loor release rate: 25 kg/day. Release fraction to wastewater from process (initial release): 0.02; (final release): 0.02; (fi					
reduce or limit discharges, air emissions and releases to soil: Separation and corganic phase ir water (Effectiver			ent of wastewater: Removal of 95% of substance through 1) Organic phase d distillation of collected process and equipment cleaning water followed by incineration or 2) incineration of all collected process and equipment cleaning reness Water: 95%).			
Conditions and measures related	to municipal Mur	nicipal Sewag	e Treatment Plan	t (STP): Yes (Effic	iency=90,9%).	
Sewage treatment plant:	to external Par	e of municipal	sewage system/	treatment plant: >=	2000 m3/day (standard town).	
treatment of waste for disposal:	ass	essment dem	ionstrating control	l of risk with default	conditions. Low risk assumed for	
· · · · · · · · · · · · · · · · · · ·	was	ste life stage.	Waste disposal a	ccording to nationa	l/local legislation is sufficient.)	
Conditions and measures related recovery of waste:	to external External regu	ernal recover ulations.	y and recycling of	waste should com	oly with applicable local and/or national	
Additional good practice advice. (according to Article 37(4) of REA apply:	Dbligations All r CH do not	isk manager	ient measures uti	lised must also con	nply with all relevant local regulations.	
3. Exposure estimation and refere	nce to its source					
Health						
Information for contributing scenar	io (1): PROC5, PROC	C8a, PROC9,	PROC14, PROC	:15		
Assessment method: ECETOC TF	RA Worker v3. Only h	ighest figures	are presented he	ere.		
Exposure estimation:	<u> </u>					
	Route		stimate	RCR	Notes	
Worker, long-term, systemic	Dermal	0,137 mg/k	g bw/day	0,053		
Worker, long-term, systemic	Inhalation	4,422 mg/n	13	0,867	PROC5, PROC9, PROC14, PROC15	
Worker, long-term, systemic	Combined routes	N/A		0,92	PROC5	
Worker, acute, systemic	Inhalation	35,37 mg/n	13	0,347	PROC8a	
Worker, acute, systemic	Combined routes	N/A		0,347	PROC8a	
Environment						
Information for contributing scenar	io (2): ERC2					
Assessment method: CHESAR V2	2.1.					
Exposure estimation:						
<u>Compartment</u>	PEC		<u>RCR</u>	<u>Notes</u>		
Freshwater	0,005 mg/L		0,288			
Freshwater sediment	3,074 mg/kg dw		0,288			
Marine water	0,000483 mg/L		0,288			
Marine water sediment	0,306 mg/kg dw		0,286			
Soil	1,135 mg/kg dw		0,535			
STP	0,046 mg/L		<0,01			
Man via environment	0,002 mg/m3 / 0,0	38 mg/kg	<0,01 / 0,094	Inhalation / Oral		

Man via environment-Combined N/A routes

Health:

RCR=Risk characterization ratio (PEC/PNEC or Exposure estimate/DNEL); PEC=Predicted environmental concentration.

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

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Indoor use, LEV used, with gloves, no respirator required. Duration: PROC1, PROC2, PROC3, PROC5, PROC8b, PROC9, PROC14, PROC15: <8 hours/day. PROC8a: <1 hour/day. Concentration of substance: Up to 100%.

0,096

Other given operational conditions affecting

workers exposure:

Environment: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required Exposure scenario (3): Use at industrial sites - Industrial use of washing and cleaning products 1. Exposure scenario (3) Short title of the exposure scenario: Use at industrial sites - Industrial use of washing and cleaning products List of use descriptors: Sector of use category (SU): SU0 Product category (PC): PC35 Process category (PROC): PROC1, PROC2, PROC4, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13 Environmental release category (ERC): ERC4 List of names of contributing worker scenarios and corresponding PROCs: PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions. PROC4 Chemical production where opportunity for exposure arises. PROC7 Industrial spraying. Air dispersive techniques i.e. dispersion into air (= atomization) by e.g. pressurized air, hydraulic pressure or centrifugation, applicable for liquids and powders. PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities. Transfer includes loading, filling, dumping, bagging and weighing. PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities. Transfer includes loading, filling, dumping, bagging. PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing). Filling lines specifically designed to both capture vapour and aerosol emissions and minimise spillage. PROC10 Roller application or brushing. This includes application of paints, coatings, removers, adhesives or cleaning agents to surfaces with potential exposure arising from splashes. PROC13 Treatment of articles by dipping and pouring. Name of contributing environmental scenario and corresponding ERCs: ERC4 Use of non-reactive processing aid at industrial site (no inclusion into or onto article). Further explanations: PC35 Washing and cleaning products. For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/information_requirements_r12_en.pdf). 2. Conditions of use affecting exposure 2.1 Control of workers exposure General: Generally accepted standards of occupational hygiene are maintained. Smoking, eating and drinking are prohibited at the workplace. Spills are cleaned immediately. Local exhaust ventilation and gloves are considered. Product characteristics: Concentration of substance: - PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC9, PROC13: 5-25%. - PROC7, PROC10: 1-5%. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Amounts used: This information is not relevant for assessment of worker's exposure. Frequency and duration of use/exposure: Duration: - PROC1, PROC2, PROC4, PROC8b, PROC9: <8 hours/day. - PROC8a, PROC10, PROC13: <4 hours/day. - PROC7: <1 hour/day. Human factors not influenced by risk Exposed skin surface: management: - PROC1: 240 cm2 (one hand, face side only).

Location: Indoor use.

Domain: Industrial use.

- PROC7: 1500 cm2 (two hands and upper wrists).	
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Technical conditions and measures to control	General ventilation: Basic general ventilation (1-3 air changes per hour): 0%.
dispersion from source towards the worker:	Containment:
	- PROC1: Closed system (minimal contact during routine operations).
	- PROC2: Closed continuous process with occasional controlled exposure.
	- PROC4, PROC8b, PROC9: Semi-closed process with occasional controlled exposure.
	- PROC7, PROC8a, PROC10, PROC13: No.
	Local exhaust ventilation:
	- PROC1: Not required.
	- PROC2, PROC4, PROC8a, PROC9, PROC10, PROC13: Yes (90% effectiveness).
	- PROC7, PROC8b: Yes (95% effectiveness).
	Local exhaust ventilation (for dermal):
	- PROC1, PROC10: Not required.
	- PROC2, PROC4, PROC8a, PROC9, PROC13: Yes (90% effectiveness).
	- PROC7, PROC8b: Yes (95% effectiveness).
	Occupational Health and Safety Management System: Advanced.
Conditions and measures related to personal	Respiratory protection: Not required.
protection, hygiene and health evaluation:	Dermal protection: Yes (chemically resistant gloves conforming to EN374 with basic
	employee training) (minimum efficiency dermal: 90%).
Additional good practice advice. Obligations	Generally accepted standards of occupational hygiene are maintained.
according to Article 37(4) of REACH do not	Minimisation of manual phases/work tasks.
apply:	Minimisation of splashes and spills.
	Avoidance of contact with contaminated tools and objects.
	Regular cleaning of equipment and work area.
	Training staff on good practice.
	Management/supervision in place to check that RMMs in place are being used correctly and
	OCs followed.
	For tasks where potential splashes may arise, the following personal protective equipment is
	recommended: face shield, substance/task appropriate gloves and full skin coverage with
	appropriate light-weight barrier materials (e.g. coveralls).
2.2 Control of environmental exposure	
General:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year.
General: Product characteristics:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid.
General: Product characteristics:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C
General: Product characteristics: Amounts used:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day.
General: Product characteristics: Amounts used:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year.
General: Product characteristics: Amounts used:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005.
General: Product characteristics: Amounts used:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %.
General: Product characteristics: Amounts used: Frequency and duration of use:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year.
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default).
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default).
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,55 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default).
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use.
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release rate: 1,66 kg/day.
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00.
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Palaese fraction to wastewater from process (initial release): 1,00; (final release): 1,00.
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Techniceleosite and divisors addresses to the second sec	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to soil from process (final release): 0,05.
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit disabareae air emissions and the statement of the	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release: 1,66 kg/day. Release fraction to soil from process (final release): 0,05. Dry sludge application to agricultural soil: Yes (default).
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and release to reduce to reduc	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to soil from process (final release): 0,05. Dry sludge application to agricultural soil: Yes (default).
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to soil from process (final release): 0,05. Dry sludge application to agricultural soil: Yes (default).
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Conditions and measures related to municipal conditions	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,002 ton/day. Maximum annual use at a site: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release: 1,66 kg/day. Release fraction to soil from process (final release): 0,05. Dry sludge application to agricultural soil: Yes (default).
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Conditions and measures related to municipal sewage treatment plant:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to soil from process (final release): 0,05. Dry sludge application to agricultural soil: Yes (default).
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Conditions and measures related to municipal sewage treatment plant: Conditions and measures related to external treatment of measures	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release: 1,66 kg/day. Release fraction to soil from process (final release): 0,05. Dry sludge application to agricultural soil: Yes (default). Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90,9%). Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town). Particular considerations on the waste treatment operations: No (low risk) (ERC based arease and the first in the soft in the first in the soft in the
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Conditions and measures related to municipal sewage treatment plant: Conditions and measures related to external treatment of waste for disposal:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release: 1,66 kg/day. Release fraction to soil from process (final release): 0,05. Dry sludge application to agricultural soil: Yes (default). Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90,9%). Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town). Particular considerations on the waste treatment operations: No (low risk) (ERC based assessment demonstrating control of risk with default conditions. Low risk assumed for worth life store.
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Conditions and measures related to municipal sewage treatment plant: Conditions and measures related to external treatment of waste for disposal:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,5 tons/year. Fraction of the main local source: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release : 1,66 kg/day. Release fraction to soil from process (final release): 0,05. Dry sludge application to agricultural soil: Yes (default). Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90,9%). Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town). Particular considerations on the waste treatment operations: No (low risk) (ERC based assessment demonstrating control of risk with default conditions. Low risk assumed for waste life stage. Waste disposal according to national/local legislation is sufficient.)
General: Product characteristics: Amounts used: Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Conditions and measures related to municipal sewage treatment plant: Conditions and measures related to external treatment of waste for disposal:	All risk management measures utilised must also comply with all relevant local regulations. Fraction of the main local source: 0,005. Emission days: 300 days/year. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Maximum daily use at a site: 0,002 ton/day. Maximum annual use at a site: 0,002 ton/day. Maximum annual use at a site: 0,005. Percentage of tonnage used at regional scale: 100 %. Emission days: 300 days/year. Flow rate of receiving surface water: >=18,000 m3/day (default). Indoor use. Industrial use. Release fraction to air from process (initial release):1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 1,66 kg/day. Release fraction to soil from process (final release): 0,05. Dry sludge application to agricultural soil: Yes (default). Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90,9%). Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town). Particular considerations on the waste treatment operations: No (low risk) (ERC based assessment demonstrating control of risk with default conditions. Low risk assumed for waste life stage. Waste disposal according to national/local legislation is sufficient.) External recovery and recycling of waste should comply with applicable local and/or national recuded as

Additional good practice advice. Obligations All risk management measures utilised must also comply with all relevant local regulations. According to Article 37(4) of REACH do not

apply:

3. Exposure estimation and	referen	ce to its source				
Health	· · · ·	(4) 00007 0007				
Information for contributing s	cenaric	(1): PROC7, PROC	38a, PROC10), PROC13		
Assessment method: ECET	JUTRA	A WORKER V3. UNIY NI	gnest figures	are presented ne	ere.	
Exposure estimation:		Pouto	European and		PCP	Notos
Worker long term evetemi	•	Dormal			0.211	
Worker, long term, systemic			0,549 mg/kg		0,211	
Worker, long-term, systemic			3,184 mg/m	13	0,624	
Worker, long-term, systemic	C	Combined routes	N/A		0,656	PROC8a, PROC13
Worker, acute, systemic		Inhalation	35,37 mg/m	13	0,347	PROC7
Worker, acute, systemic		Combined routes	N/A		0,347	PROC7
Environment	<u> </u>					
Information for contributing s	cenario	(2): ERC4				
Assessment method: CHES	AR V2.'	1.				
Exposure estimation:		DEC		DCD	Notoo	
				<u>RCR</u>	<u>INOLES</u>	
		0,008 mg/L		0,466		
Freshwater sediment		4,963 mg/kg dw		0,466		
Marine water		0,0007806 mg/L		0,465		
Marine water sediment		0,495 mg/kg dw		0,463		
Soil		1,875 mg/kg dw		0,885		
STP		0,076 mg/L		<0,01		
Man via environment		0,0003881 mg/m3 kg bw/day	/ 0,015 mg/	<0,01 / 0,039	Inhalation / Oral	
Man via environment-Comb routes	oined	N/A		0,039		
RCR=Risk characterization	atio (Pl	EC/PNEC or Exposu	ure estimate/E	ONEL); PEC=Pred	dicted environmenta	I concentration.
4. Guidance to the Downstre	eam Us	er to evaluate whet	her he works	inside the bound	daries set by the ES	
Health: Pr	edicted	exposures are not	expected to e	xceed the DN(M)	EL when the Risk M	anagement Measures/Operational
C	ondition	s outlined in Sectior	n 2 are implen	nented. Where ot	her Risk Manageme	nt Measures/Operational Conditions
ar	e adopt	ed, then users shou	ld ensure tha	t risks are manag	ed to at least equiva	ilent levels. Indoor use, LEV used,
WI PI	with gloves, no respirator required. Duration: PROC1, PROC2, PROC4, PROC8b, PROC9: <8 hours/day. PROC8a, PROC10, PROC11, proceeding of substance: PROC11, PROC2, PROC4					
PI	PROC8a, PROC8b, PROC9, PROC13: 5-25%, PROC7. PROC10: 1-5%.					
Environment: Guidance is based on assumed operating conditions which may not be applicable to all sites: thus, scaling may be						
necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater						
can be achieved using onsite/offsite technologies, either alone or in combination. If scaling reveals a condition of						
ur	nsafe us	se (i.e., RCRs > 1), a	additional RM	Ms or a site-spec	ific chemical safety	assessment is required.
Exposure scenario (4): Us	e at ind	dustrial sites - Ind	ustrial manu	ifacture of textil	les, leather and fu	r
1. Exposure scenario (4)						
Short title of the exposure so	cenario					
Use at industrial sites - Indu	istrial m	anutacture of textile	s, leather and	1 tur		
LIST OF USE descriptors:	· SI 15					
Product category (PC): PC3	, 555 34					

Process category (PROC): PROC5, PROC8a, PROC8b, PROC9, PROC13.

Environmental release category (ERC): ERC4

List of names of contributing worker scenarios and corresponding PROCs:

PROC5 Mixing or blending in batch processes. Covers mixing or blending of solid or liquid materials in the context of manufacturing or formulating sectors, as well as upon end use.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities. Transfer includes loading, filling, dumping, bagging and weighing.

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities. Transfer includes loading, filling, dumping, bagging. PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing). Filling lines specifically designed to both capture vapour and aerosol emissions and minimise spillage.

PROC13 Treatment of articles by dipping and pouring.

Name of contributing environmental scenario and corresponding ERCs:

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

Further explanations:	
PC34 Textile dyes, and impregnating products.	
For further information on standardized use descriptors see Chapter R.12: Use descriptor system (http://guidance.echa.	the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, europa.eu/docs/guidance_document/information_requirements_r12_en.pdf).
2. Conditions of use affecting exposure	
2.1 Control of workers exposure	
General:	Generally accepted standards of occupational hygiene are maintained. Smoking, eating and
	drinking are prohibited at the workplace. Spills are cleaned immediately. Local exhaust
	ventilation and gloves are considered.
Product characteristics:	Concentration of substance: Up to 100%.
	Physical state: liquid.
	Vapour pressure: 0,0305 Pa at 25 °C
Amounts used:	This information is not relevant for assessment of worker's exposure.
Frequency and duration of use/exposure:	Duration:
	- PROC5, PROC8b, PROC9: <8 hours/day.
	- PROC8a, PROC13: <1 hour/day.
Human factors not influenced by risk	Exposed skin surface:
management:	- PROC5, PROC9, PROC13: 480 cm2 (two hands, face side only).
-	- PROC8a, PROC8b: 960 cm2 (two hands).
Other given operational conditions affecting	Location: Indoor use.
workers exposure:	Domain: Industrial use.
	Process temperature (for liquid): <= 40 °C.
	Assessment tool used: ECETOC TRA Worker v3 for inhalation and dermal exposure.
Technical conditions and measures to control	General ventilation: Basic general ventilation (1-3 air changes per hour): 0%.
dispersion from source towards the worker:	Containment:
	 PROC8b, PROC9: Semi-closed process with occasional controlled exposure.
	- PROC5, PROC8a, PROC13: No.
	Local exhaust ventilation:
	- PROC5, PROC8a, PROC9, PROC13: Yes (90% effectiveness).
	- PROC8b: Yes (95% effectiveness).
	Local exhaust ventilation (for dermal):
	- PROC5, PROC8a, PROC9, PROC13: Yes (90% effectiveness).
	- PROC8b: Yes (95% effectiveness).
	Occupational Health and Safety Management System: Advanced.
Conditions and measures related to personal	Respiratory protection: Not required.
protection, hygiene and health evaluation:	Dermal protection: Yes (chemically resistant gloves conforming to EN374 with basic
	employee training) (minimum efficiency dermal: 90%).
Additional good practice advice. Obligations	Generally accepted standards of occupational hygiene are maintained.
according to Article 37(4) of REACH do not	Minimisation of manual phases/work tasks.
apply:	Minimisation of splashes and spills.
	Avoidance of contact with contaminated tools and objects.
	Regular cleaning of equipment and work area.
	Training staff on good practice.
	Management/supervision in place to check that RMMs in place are being used correctly and
	OCs followed.
	For tasks where potential splashes may arise, the following personal protective equipment is
	recommended: face shield, substance/task appropriate gloves and full skin coverage with
2.2. Central of environmental evacuure	appropriate light-weight barrier materials (e.g. coverails).
	All risk management mageures utilized must des samplumithell relevant less be with the
	All hisk management measures utilised must also comply with all relevant local regulations.
	Eniission uays. 500 uays/year. Maximum annual uca at a cita: 75 tana/ucar
	iviaximum annual use at a site. 75 tons/year. Troot air omission to provide a typical removal officiency of 0.5%
	Theat all emission to provide a typical removal efficiency of 95%. Safe use can be demonstrated when emission to receiving waters is $c=1.5$ kg/day.
	Care use can be demonstrated when emission to receiving waters is ~-1,5 kg/ddy.

Product characteristics:	Phy	/sical state: li	quid.				
	Vap	our pressure	e: 0,0305 Pa at 25	°C			
Amounts used:	Ma	ximum daily (use at a site: 0,25	ton/day.			
	Ma	Maximum annual use at a site: 75 tons/year.					
	Per	Percentage of tonnage used at regional scale: 100 %.					
Frequency and duration of use:	Em	Emission days: 300 days/year.					
Environmental factors not influen management:	ced by risk Flor	w rate of rece	eiving surface wat	er: >=18,000 m3/day	ν (default).		
Other given operational condition	s affecting Indu	Industrial use.					
environmental exposure:	Inde	Indoor use.					
	Rel	ease fraction	to air from proces	ss (initial release): 1,	00; (final release): 0.05. Local release		
	rate	e: 12,5 kg/day	/. . to wootowator fro	m process (final role	analy 0.006 Land release rates 1.5		
	Rei ka/i	ease fraction dav	i to wastewater iro	in process (intai rele	ase). 0,000. Local release rate. 1,5		
	Rel	ease fraction	to soil from proce	ess (final release): 0,	05.		
Technical onsite conditions and n	neasures to Dry	sludge appli	cation to agricultu	ral soil: Yes (default)).		
reduce or limit discharges, air em	iissions and Tre	at air emissio	on to provide a typ	ical removal efficien	cy of 95%.		
releases to soil:	Teo	chnical option	is to treat air emis	sions and stack gas	removal: carbon tower adsorption or		
	was	ste gas incine	eration.				
Conditions and measures related	to municipal Mu	nicipal Sewa	ge Treatment Plar	nt (STP): Yes (Efficie	ency=90,9%).		
sewage treatment plant:	Siz	e of municipa	al sewage system/	treatment plant: >=2	000 m3/day (standard town).		
Conditions and measures related	to external Par	ticular consid	derations on the w	aste treatment opera	ations: No (low risk) (ERC based		
treatment of waste for disposal.	ass was	ste life stane	Waste disposal a	cording to national	local legislation is sufficient)		
Conditions and measures related	to external Ext	ernal recover	ry and recycling of	waste should comp	ly with applicable local and/or national		
recovery of waste:	reg	ulations.	y and reeyening e				
Additional good practice advice.	Obligations All	risk manager	ment measures uti	lised must also com	ply with all relevant local regulations.		
according to Article 37(4) of REA	CH do not	-					
apply:							
3. Exposure estimation and refere	ence to its source						
Health							
Information for contributing scenar	io (1): PROC5, PRO	C8a, PROC9	, PROC13				
Assessment method: ECETOC TF	RA Worker v3. Only h	ighest figure	s are presented he	ere.			
Exposure estimation:							
	<u>Route</u>	Exposure	<u>estimate</u>	<u>RCR</u>	<u>Notes</u>		
Worker, long-term, systemic	Dermal	0,137 mg/l	kg bw/day	0,053	PROC5, PROC8a, PROC13		
Worker, long-term, systemic	Inhalation	4,422 mg/r	m3	0,867	PROC5, PROC9		
Worker, long-term, systemic	Combined routes	N/A		0,92	PROC5		
Worker, acute, systemic	Inhalation	35,37 mg/ı	m3	0,347	PROC8a, PROC13		
Worker, acute, systemic	Combined routes	N/A		0.347	PROC8a, PROC13		
Environment				- , -	,		
Information for contributing scenar	io (2): ERC4						
Assessment method: CHESAR V2	P.1.						
Exposure estimation:							
Compartment	PEC		RCR	Notes			
Freshwater	0.007 mg/l		0.423	<u></u>			
Erochwater codiment	4.505 mg/kg dw		0,423				
	4,505 mg/kg dw		0,423				
	0,0007084 mg/L		0,422				
Marine water sediment	0,45 mg/kg dw		0,42				
Soil	1,701 mg/kg dw		0,802				
STP	0,068 mg/L		<0,01				
Man via environment	0,003 mg/m3 / 0,0	57 mg/kg	<0,01 /0,144	Inhalation / Oral			
	Dw/day						

RCR=Risk characterization ratio (PEC/PNEC or Exposure estimate/DNEL); PEC=Predicted environmental concentration.

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

Health:	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Indoor use, LEV used, with gloves, no respirator required. Duration: PROC5, PROC8b, PROC9: <8 hours/day. PROC8a, PROC13: <1 hour/day. Concentration of substance: Up to 100%.
Environment:	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.

Exposure scenario (5): Use at industrial sites - Use as processing aid

1. Exposure scenario (5)

Short title of the exposure scenario:

Use at industrial sites - Use as processing aid

List of use descriptors:

Sector of use category (SU): SU9, SU12

Product category (PC): PC3, PC9a, PC21, PC28, PC31, PC32, PC35, PC39

Process category (PROC): PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15

Environmental release category (ERC): ERC4

List of names of contributing worker scenarios and corresponding PROCs:

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions.

PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition.

PROC4 Chemical production where opportunity for exposure arises.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities. Transfer includes loading, filling, dumping, bagging and weighing.

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities. Transfer includes loading, filling, dumping, bagging. PROC9 Transfer of substance or mixture into small containers (dedicated filling line, including weighing). Filling lines specifically designed to both capture vapour and aerosol emissions and minimise spillage.

PROC15 Use as laboratory reagent. Use of substances at small scale in laboratories (less than or equal to 1 l or 1 kg present at workplace).

Name of contributing environmental scenario and corresponding ERCs:

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

Further explanations:

PC3 Air care products.

PC35 Washing and cleaning products.

PC9a Coatings and paints, thinners, paint removers.

PC21 Laboratory chemicals.

PC28 Perfumes, fragrances.

PC31 Polishes and wax blends.

PC32 Polymer preparations and compounds.

PC39 Cosmetics, personal care products.

For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/information_requirements_r12_en.pdf).

2. Conditions of use affecting exposure

2.1 Control of workers exposure				
General:	Generally accepted standards of occupational hygiene are maintained. Smoking, eating and			
	drinking are prohibited at the workplace. Spills are cleaned immediately. Local exhaust			
	ventilation and gloves are considered.			
Product characteristics:	Concentration of substance: Up to 100%.			
	Physical state: liquid.			
	Vapour pressure: 0,0305 Pa at 25 °C			
Amounts used:	This information is not relevant for assessment of worker's exposure.			
Frequency and duration of use/exposure:	Duration:			
	- PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC15: <8 hours/day.			
	- PROC8a: <1 hour/day.			

Human factors not influenced by risk	Exposed skin surface:
management:	- PROC1, PROC3, PROC15: 240 cm2 (one hand, face side only).
	- PROC2, PROC4, PROC9: 480 cm2 (two hands, face side only).
	- PROC8a, PROC8b: 960 cm2 (two hands).
Other given operational conditions affecting	Location: Indoor use.
workers exposure:	Domain: Industrial use.
	Process temperature (for liquid): <= 40 °C.
	Assessment tool used: ECETOC TRA Worker v3 for inhalation and dermal exposure.
Technical conditions and measures to control	General ventilation: Basic general ventilation (1-3 air changes per hour): 0%.
dispersion from source towards the worker:	Containment:
	- PROC1: Closed system (minimal contact during routine operations).
	 PROC2: Closed continuous process with occasional controlled exposure.
	- PROC3: Closed batch process with occasional controlled exposure.
	- PROC4, PROC8b, PROC9: Semi-closed process with occasional controlled exposure.
	- PROC8a, PROC15: No.
	Local exhaust ventilation:
	- PROC2, PROC3, PROC4, PROC8a, PROC9, PROC15: Yes (90% effectiveness).
	- PROC8D: Yes (95% effectiveness).
	Local exhaust ventilation (for dermal):
	- PROCI I NOT required.
	- PROUZ, PROU3, PROU4, PROU8a, PROU9, PROU15: Yes (90% effectiveness).
	- PROCOD: Yes (95% effectiveness).
	Occupational Health and Safety Management System: Advanced.
Conditions and measures related to personal	Respiratory protection: Not required.
protection, hygiene and health evaluation:	Dermal protection: Yes (chemically resistant gloves conforming to EIN374 with basic
	employee training) (minimum emclency dermai. 90%).
Additional good practice advice. Obligations	Generally accepted standards of occupational hygiene are maintained.
according to Article 37(4) of REACH do not	Minimisation of manual phases/work tasks.
арріу:	Minimisation of splasnes and splils.
	Avoidance of contact with contaminated tools and objects.
	Regular cleaning of equipment and work area.
	Management/ourpanining in place to sheek that PMMs in place are being used correctly and
	For tasks where notential splashes may arise, the following personal protective equipment is
	recommended: face shield, substance/task appropriate gloves and full skin coverage with
	appropriate light-weight barrier materials (e.g. coveralls)
2.2 Control of environmental exposure	
General:	All rick management measures utilised must also comply with all relevant local regulations
General.	Finission days: 300 days/year
	Maximum annual use at a site: 75 tons/vear
	Treat air emission to provide a typical removal efficiency of 95%
	Safe use can be demonstrated when emission to receiving waters is <=1.5 kg/day.
Product characteristics:	Physical state: liquid
	Vanour pressure: 0.0305 Pa at 25 °C
Amounts used:	Maximum daily use at a site: 2.5 ton/day
Anounto used.	Maximum annual use at a site: 75 tons/vear
	Percentage of tonnage used at regional scale: 100 %
Frequency and duration of use:	Emission days: 30 days/year
Environmental factors not influenced by risk	Elow rate of receiving surface water: >=18 000 m3/day (default)
management.	now rate of receiving surface water. >= 10,000 moday (defadit).
Other given operational conditions affecting	Industrial use
environmental exposure:	Indooruse
	Release fraction to air from process (initial release): 1 00: (final release): 0 05. Local release
	rate: 125 kg/day
	Release fraction to wastewater from process (final release): 0 0006 Local release rate: 1.5
	ka/day.
	Release fraction to soil from process (final release): 0,05.

Conditions and measures related to municipal Municipal Sewage Treatment Plant (STP): Yes (Efficiency=0.90.9), sewage treatment plant Size of municipal sewage systemicement plant = 2000 m3/day (standard town), Conditions and measures related to external reatment of weals for disposal:	Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil:		easures to Dry sisions and Trea Teo was	Dry sludge application to agricultural soil: Yes (default). Treat air emission to provide a typical removal efficiency of 95%. Technical options to treat air emissions and stack gas removal: carbon tower adsorption or waste gas incineration.				
Conditions and measures related to external treatment of waste for disposal: Particular considerations on the waste treatment operations: No (wrisk) (ERC based waste life stage. Waste disposal: according to national/local legislation is sufficient.) Conditions and measures related to external recovery of waste: External recovery and recycling of waste should comply with applicable local and/or national regulations. Additional good practice advice. Obligations apply: All risk management measures utilised must also comply with all relevant local regulations. Seconding to Attice 37(4) of REACH do not apply: All risk management measures utilised must also comply with all relevant local regulations. Research as the attice 37(4) of REACH do not apply: Information for contributing scenario (1): PROC4. PROC8, PROC9, PROC15 Norker. long-term. systemic Dermal 0.137 mg/kg bw/day 0.633 Worker, long-term. systemic Combined routes NA 0.947 Worker, long-term. systemic Combined routes NA 0.947 Information for contributing scenario (2): ERC4 Assessment method: CHESAR V2.1 Exposure estimation: Information for contributing scenario (2): ERC4 Assessment method: CHESAR V2.1 Exposure estimation: Information for contributing scenario (2): ERC4 Assessment method: CHESAR V2.1 Exposure estimation:	Conditions and measures related to municipal sewage treatment plant:		o municipal Mur Size	nicipal Sewag e of municipal	e Treatment Plar sewage system/	nt (STP): Yes (Efficie treatment plant: >=2	ency=90,9%). 2000 m3/day (standard town).	
Conditions and measures related to external External recovery and recycling of waste should comply with applicable local and/or national recovery of wastes: Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply: All risk management measures utilised must also comply with all relevant local regulations. according to Article 37(4) of REACH do not apply: 3. Exposure estimation and reference to its source Health Information for contributing scenario (1): PROC4, PROC8, PROC9, PROC15 Assessment method: ECETOC TRA Worker v3. Only highest figures are presented here. Exposure estimation: Worker, long-term, systemic Demail 0,053 PROC4, PROC9, PROC15 Worker, long-term, systemic Inhalation 4.422 mg/m3 0,867 PROC4, PROC9 Worker, long-term, systemic Inhalation 3.537 mg/m3 0,347 PROC68 Worker, acute, systemic Combined routes N/A 0.437 PROC8 Environment Information for contributing scenario (2): ERC4 Assessment method: CHESAR V2.1. Exposure estimation: Compartment PEC RCR Notes Notes Freshwater 0.0007 mg/L 0,423 Marine water Solid 1,701 mg/kg dw 0,423 Marine water sediment	Conditions and measures related to external treatment of waste for disposal:		o external Par ass was	Particular considerations on the waste treatment operations: No (low risk) (ERC based assessment demonstrating control of risk with default conditions. Low risk assumed for waste life stage. Waste disposal according to national/local legislation is sufficient.)				
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply: 3. Exposure estimation and reference to its source Health Information for contributing scenario (1): PROC4, PROC8a, PROC9, PROC15 Assessment method: ECETOC TRA Worker v3. Only highest figures are presented here. Exposure estimation: Worker, long-term, systemic Dermal 0, 137 mg/kg bw/day 0,053 Worker, long-term, systemic Combined routes NIA 0,893 PROC4, PROC9, PROC15 Worker, long-term, systemic Combined routes NIA 0,893 PROC4, PROC9, PROC15 Worker, acute, systemic Combined routes NIA 0,893 PROC4, PROC9 Worker, acute, systemic Combined routes NIA 0,347 PROC8a Worker, acute, systemic Combined routes NIA 0,423 Freshwater sediment 4,505 mg/kg dw 0,423 Soil 1,701 mg/kg dw 0,424 Soil 1,701 mg/kg dw 0,425 STP 0,068 mg/l Combined moves reach develoated the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other lask management Measures/Operational Conditions outlined in Section 2 are implemented. Where other lask management Measures/Operational Conditions outlined in Section 2 are implemented. Where other lask	Conditions and measures recovery of waste:	related t	o external External regu	External recovery and recycling of waste should comply with applicable local and/or national regulations.				
3. Exposure estimation and reference to its source Health Information for contributing scenario (1): PROC4, PROC8a, PROC9, PROC15 Assessment method: ECETOC TRA Worker v3. Only highest figures are presented here. Exposure estimation: Route Exposure estimate RCR Notes Worker, long-term, systemic Dermal 0.137 mg/kg bw/day 0.053 PROC64, PROC9 Worker, long-term, systemic Combined routes N/A 0.867 PROC4, PROC9 Worker, acute, systemic Combined routes N/A 0.347 PROC8a Worker, acute, systemic Combined routes N/A 0.347 PROC8a Worker, acute, systemic Combined routes N/A 0.347 PROC8a Proroment Information for contributing scenario (2): ERC4 Assessment method: CHESAR V2.1. Exposure estimation: Compariment PEC RCR Notes Notes Freshwater 0.007 mg/L 0.423 Marine water 0.0007 mg/L 0.423 Marine water sediment 0.455 mg/kg dw 0.422 Marine water Soil 1.701 mg/kg dw 0.802 SSTP	Additional good practice ad according to Article 37(4) of apply:	dvice. O	bligations All r H do not	isk managem	ient measures ut	lised must also com	ply with all relevant local regulations.	
Health Information for contributing scenario (1): PROC4, PROC3, PROC15 Assessment method: ECETOC TRA Worker v3. Only highest figures are presented here. Exposure estimation: Worker, long-term, systemic Dermal 0,137 mg/kg bw/day 0,053 PROC3a Worker, long-term, systemic Combined routes N/A 0,867 PROC4, PROC9, PROC15 Worker, acute, systemic Combined routes N/A 0,867 PROC4, PROC9 Worker, acute, systemic Combined routes N/A 0,347 PROC8a Worker, acute, systemic Combined routes N/A 0,347 PROC8a PROC4, PROC9 Worker, acute, systemic Combined routes N/A 0,347 PROC8a Environment O,055 RCR Notes Comparition for contributing scenario (2): ERC4 Assessment method: CHESAR V2.1. Exposure estim	3. Exposure estimation and	d referen	ce to its source					
Information for contributing scenario (1): PROC4, PROC3, PROC15 Assessment method: ECETOC TRA Worker v3. Only highest figures are presented here. Exposure estimation: Route Exposure estimate RCR Notes Worker, long-term, systemic Dermal 0,137 mg/kg bw/day 0,053 PROC4, PROC9, PROC15 Worker, long-term, systemic Inhalation 4,422 mg/m3 0,867 PROC4, PROC9 Worker, acute, systemic Combined routes N/A 0,893 PROC4, PROC9 Worker, acute, systemic Combined routes N/A 0,347 PROC8a Worker, acute, systemic Combined routes N/A 0,347 PROC8a Environment Information for contributing scenario (2): ERC4 Assessment method: CHESAR V2.1. Exposure estimation: Compartment PEC RCR Notes Notes Freshwater 0.007 mg/L 0.423 Information for ontributing scenario (2): ERC4 Assessment method: CHESAR V2.1. Exposure estimation: Scill 1,701 mg/kg dw 0,423 Marine water 0,0007084 mg/L 0,422 Scill Scill 1,701 mg/kg dw 0,422	Health							
Assessment method: ECETOC TRA Worker v3. Only highest figures are presented here. Exposure estimation: Worker, long-term, systemic Dermal 0,137 mg/kg bw/day 0,653 PROC8a Worker, long-term, systemic Inhalation 4.422 mg/m3 0.867 PROC4, PROC9, PROC15 Worker, long-term, systemic Inhalation 35.37 mg/m3 0.347 PROC8a Worker, acute, systemic Inhalation 35.37 mg/m3 0.347 PROC8a Worker, acute, systemic Combined routes N/A 0.347 PROC8a Environment Dec RCR Notes Information for contributing scenario (2): ERC4 Assessment method: CHESAR V2.1. Exposure estimation: Compartment PEC RCR Notes Freshwater 0.0007 mg/L 0.423 Freshwater 0.0007 mg/L 0.422 Marine water sediment 0.45 mg/kg dw 0.482 Soil 1.701 mg/kg dw 0.802 STP 0.068 mg/L <0.01 / 0.14 Inhalation / Oral wday Marine water sediment N/A 0.142 routes RCR=Risk characterization ra	Information for contributing	scenario	(1): PROC4, PRO	C8a, PROC9,	PROC15			
Exposure estimation: Route Exposure estimate RCR Notes Worker, long-term, systemic Dermal 0,137 mg/kg bw/day 0,053 PROC8a Worker, long-term, systemic Inhalation 4,422 mg/m3 0,867 PROC4, PROC9, PROC15 Worker, acute, systemic Combined routes N/A 0,893 PROC4, PROC9 Worker, acute, systemic Combined routes N/A 0,347 PROC8a Worker, acute, systemic Combined routes N/A 0,347 PROC8a Environment Combined routes N/A 0,347 PROC8a Exposure estimation: Exposure estimation: Exposure estimation: Exposure estimation: Compartment PEC RCR Notes Notes Freshwater 0,007 mg/L 0,422 Marine water 0,0007084 mg/L 0,422 Soil 1,701 mg/kg dw 0,802 STP 0,068 mg/kg <	Assessment method: ECET	TOC TRA	A Worker v3. Only h	ighest figures	are presented he	ere.		
Koute Exposure estimate KLX Notes Worker, long-term, systemic Inhalation 4.422 mg/m3 0.867 PROC4, PROC9, PROC15 Worker, long-term, systemic Inhalation 35,37 mg/m3 0.347 PROC8 Worker, acute, systemic Inhalation 35,37 mg/m3 0.347 PROC8 Worker, acute, systemic Combined routes N/A 0.347 PROC8a Worker, acute, systemic Combined routes N/A 0.347 PROC8a Environment Environment Environment Environment Environment Environment PEC RCR Notes Notes Freshwater 0.007 mg/L 0.423 Marine water 0.0007084 mg/L 0.422 Soil 1.701 mg/kg dw 0.802 STP 0.068 mg/L <0.01	Exposure estimation:		Davita		4	BOD	Nataa	
Worker, Iong-term, systemic Defmai 0.137 mg/kg bW/day 0.033 PROC4, PROC9, Worker, Iong-term, systemic Inhalation 4.422 mg/m3 0.867 PROC4, PROC9 Worker, Iong-term, systemic Inhalation 35.37 mg/m3 0.347 PROC4, PROC9 Worker, acute, systemic Inhalation 35.37 mg/m3 0.347 PROC8a Environment Information for contributing scenario (2): ERC4 0.347 PROC8a Assessment method: CHESAR V2.1. Exposure estimation: Compartment PEC RCR Notes Freshwater 0.0007 mg/L 0.423 Marine water sediment 4.505 mg/kg dw 0.422 Marine water sediment 0.45 mg/kg dw 0.42 Soil 1.701 mg/kg dw 0.802 STP 0.068 mg/L <0.01			<u>Route</u>	Exposure e		<u>RCR</u>		
Worker, long-term, systemic Initialation 4.422 mg/m3 0.807 PROC4, PROC5 Worker, long-term, systemic Combined routes N/A 0.893 PROC4, PROC9 Worker, acute, systemic Inhalation 35.37 mg/m3 0.347 PROC8a Worker, acute, systemic Combined routes N/A 0.347 PROC8a Environment Information for contributing scenario (2): ERC4 Assessment method: CHESAR V2.1. Exposure estimation: Compartment PEC RCR Notes Freshwater 0,007 mg/L 0,423 Marine water 0,0007084 mg/L 0.422 Marine water 0,0007084 mg/L 0.422 Marine water sediment 0.458 mg/kg dw 0.422 Soil 1,701 mg/kg dw 0.802 STP 0,068 mg/L <0.01	Worker, long-term, system		Dermai	0,137 mg/k	g bw/day	0,053		
Worker, forg-term, systemic Combined rotutes N/A 0.933 PROC4, PROC9 Worker, acute, systemic Inhalation 35,37 mg/m3 0,347 PROC8a Worker, acute, systemic Combined routes N/A 0,347 PROC8a Environment Information for contributing scenario (2): ERC4 Assessment method: CHESAR V2.1. Exposure estimation: Zompartment PEC RCR Notes Freshwater 0,007 mg/L 0,423 Marine water sediment 4,505 mg/kg dw 0,422 Marine water sediment 0,456 mg/kg dw 0,422 Soil 1,701 mg/kg dw 0,802 STP 0,068 mg/L <0,01	Worker, long-term, system			4,422 mg/m	13	0,867		
Worker, acute, systemic Inhaition 35, 3/ mg/m3 0,347 PROC8a Worker, acute, systemic Combined routes N/A 0,347 PROC8a Environment Information for contributing scenario (2): ERC4 Assessment method: CHESAR V2.1. Exposure estimation: Compartment PEC RCR Notes Freshwater 0,007 mg/L 0,423 Marine water 0,0007084 mg/L 0,422 Marine water sediment 0,455 mg/kg dw 0,422 Soil 1,701 mg/kg dw 0,802 STP 0,068 mg/L <0,01	vvorker, long-term, system	IC		N/A	2	0,893		
Worker, acute, systemic Combined routes N/A 0.347 PROC8a Environment Information for contributing scenario (2): ERC4 Assessment method: CHESAR V2.1. Exposure estimation: Compartment PEC RCR Notes Freshwater 0,007 mg/L 0,423 Marine water 0.0007084 mg/L 0,422 Marine water 0,0007084 mg/L 0,422 Soil 1,701 mg/kg dw 0,422 Soil 1,701 mg/kg dw 0,802 STP 0.068 mg/L <0,01 / 0,14	VVorker, acute, systemic			35,37 mg/m	13	0,347	PROC8a	
Environment Information for contributing scenario (2): ERC4 Assessment method: CHESAR V2.1. Exposure estimation: Compartment PEC RCR Notes Freshwater 0,007 mg/L 0,423 Freshwater sediment 4.505 mg/kg dw 0,422 Marine water sediment 0,45 mg/kg dw 0,422 Soil 1,701 mg/kg dw 0,802 STP 0,068 mg/L <0,01	Worker, acute, systemic		Combined routes	N/A		0,347	PROC8a	
Compartment PEC RCR Notes Freshwater 0,007 mg/L 0,423 Freshwater sediment 4,505 mg/kg dw 0,423 Marine water 0,0007084 mg/L 0,422 Marine water sediment 0,45 mg/kg dw 0,422 Soil 1,701 mg/kg dw 0,802 STP 0,068 mg/L <0,01	Information for contributing Assessment method: CHES Exposure estimation:	scenaric SAR V2.	9 (2): ERC4 1.					
Freshwater 0,007 mg/L 0,423 Freshwater sediment 4,505 mg/kg dw 0,423 Marine water 0,0007084 mg/L 0,422 Marine water sediment 0,45 mg/kg dw 0,42 Soil 1,701 mg/kg dw 0,802 STP 0,068 mg/L <0,01	<u>Compartment</u>		PEC		<u>RCR</u>	<u>Notes</u>		
Freshwater sediment 4,505 mg/kg dw 0,423 Marine water 0,0007084 mg/L 0,422 Marine water sediment 0,45 mg/kg dw 0,42 Soil 1,701 mg/kg dw 0,802 STP 0,068 mg/L <0,01	Freshwater		0,007 mg/L		0,423			
Marine water 0,0007084 mg/L 0,422 Marine water sediment 0,45 mg/kg dw 0,42 Soil 1,701 mg/kg dw 0,802 STP 0,068 mg/L <0,01	Freshwater sediment		4,505 mg/kg dw		0,423			
Marine water sediment 0,45 mg/kg dw 0,42 Soil 1,701 mg/kg dw 0,802 STP 0,068 mg/L <0,01	Marine water		0,0007084 mg/L		0,422			
Soil 1,701 mg/kg dw 0,802 STP 0,068 mg/L <0,01	Marine water sediment		0,45 mg/kg dw		0,42			
STP 0,068 mg/L <0,01	Soil		1,701 mg/kg dw		0,802			
Man via environment 0,003 mg/m3 / 0,056 mg/kg <0,01 / 0,14			0,068 mg/L	"	<0,01			
Man via environment-Combined N/A 0,142 routes RCR=Risk characterization ratio (PEC/PNEC or Exposure estimate/DNEL); PEC=Predicted environmental concentration. 4. Guidance to the Downstream User to evaluate whether he works inside the boundaries set by the ES Health: Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Indoor use, LEV used, with gloves, no respirator required. Duration: PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC15: <8 hours/day. PROC8a: <1 hour/day. Concentration of substance: Up to 100%.	Man via environment		0,003 mg/m3 / 0,0 bw/day	56 mg/kg	<0,01 / 0,14	Inhalation / Oral		
RCR=Risk characterization ratio (PEC/PNEC or Exposure estimate/DNEL); PEC=Predicted environmental concentration. 4. Guidance to the Downstream User to evaluate whether he works inside the boundaries set by the ES Health: Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Indoor use, LEV used, with gloves, no respirator required. Duration: PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC15: <8 hours/day. PROC8a: <1 hour/day. Concentration of substance: Up to 100%.	Man via environment-Com routes	nbined	N/A		0,142			
 4. Guidance to the Downstream User to evaluate whether he works inside the boundaries set by the ES Health: Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Indoor use, LEV used, with gloves, no respirator required. Duration: PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC15: <8 hours/day. PROC8a: <1 hour/day. Concentration of substance: Up to 100%. Environment: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required. 	RCR=Risk characterization	n ratio (Pl	EC/PNEC or Exposi	ure estimate/[ONEL); PEC=Pre	dicted environmenta	al concentration.	
Health: Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Indoor use, LEV used, with gloves, no respirator required. Duration: PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC15: <8 hours/day. PROC8a: <1 hour/day. Concentration of substance: Up to 100%.	4. Guidance to the Downst	ream Us	er to evaluate whet	her he works	inside the boun	daries set by the ES	<u>s</u>	
Environment: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.	Health: F	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Indoor use, LEV used, with gloves, no respirator required. Duration: PROC1, PROC2, PROC3, PROC4, PROC8b, PROC9, PROC15: <8 hours/day. PROC8a: <1 hour/day. Concentration of substance: Up to 100%.						
	Environment: ()	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.						

1. Exposure scenario (6)

Short title of the exposure scenario:

Use by professional workers - Professional use of washing and cleaning products

List of use descriptors:

Sector of use category (SU): SU0 Product category (PC): PC35 Process category (PROC): PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13 Environmental release category (ERC): ERC8a, ERC8d

List of names of contributing worker scenarios and corresponding PROCs:

PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions.

PROC4 Chemical production where opportunity for exposure arises.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities. Transfer includes loading, filling, dumping, bagging and weighing.

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities. Transfer includes loading, filling, dumping, bagging. PROC10 Roller application or brushing. This includes application of paints, coatings, removers, adhesives or cleaning agents to surfaces with potential exposure arising from splashes.

PROC11 Non industrial spraying. Air dispersive techniques i.e. dispersion into air (= atomization) by e.g. pressurized air, hydraulic pressure or centrifugation, applicable for liquids and powders.

PROC13 Treatment of articles by dipping and pouring.

Name of contributing environmental scenario and corresponding ERCs:

ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor).

ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor).

Further explanations:

PC35 Washing and cleaning products.

For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/information_requirements_r12_en.pdf).

2. Conditions of use affecting exposure	
2.1 Control of workers exposure	
General:	Generally accepted standards of occupational hygiene are maintained. Smoking, eating and drinking are prohibited at the workplace. Spills are cleaned immediately. Gloves are considered. Respiratory protection: PROC10, PROC11: Yes (Respirator with APF of 10) (Effectiveness Inhalation: 90%).
Product characteristics:	Concentration of substance: - PROC1: 5-25%. - PROC2, PROC4, PROC8a, PROC8b, PROC10, PROC13: 1-5%. - PROC11: <1%. Physical state: liquid. Vapour pressure: 0,0305 Pa at 25 °C Viscosity: Liquids with medium viscosity.
Amounts used:	Application rate (for inhalation exposure): PROC8a: 1-10 L/minute.
Frequency and duration of use/exposure:	Duration: - PROC1: <8 hours/day. - PROC10: <4 hours/day. - PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13: <1 hour/day.
Human factors not influenced by risk management:	Exposed skin surface: - PROC1: 240 cm2 (one hand, face side only). - PROC2, PROC4, PROC13: 480 cm2 (two hands, face side only). - PROC8a, PROC8b, PROC10: 960 cm2 (two hands). - PROC11: 1500 cm2 (two hands and upper wrists).
Other given operational conditions affecting workers exposure:	Location: - PROC1, PROC2, PROC4: Indoor use. - PROC8a, PROC8b, PROC10, PROC11, PROC13: Indoor/outdoor use. Domain: Professional use. Process temperature (for liquid): - PROC1, PROC2, PROC4, PROC8a (dermal exposure), PROC8b, PROC10, PROC11, PROC13: <=40°C. - PROC8a (inhalation exposure): 15-25 °C. Assessment tool used: - PROC1, PROC2, PROC4, PROC8b, PROC10, PROC11, PROC13: ECETOC TRA Worker v3 for inhalation and dermal exposure. - PROC8a: ECETOC TRA Worker v3 for dermal exposures. Advanced REACH Tool (ART v1.5) for inhalation exposure.

recimical conditions and measures at process	Activity class - subclass (ART v1.5): PROC8a: Transfer of liquid products - falling liquids.
level (source) to prevent release:	Containment: open process - splash loading. Process not fully enclosed but demonstrable
	and effective housekeeping practices in place.
Technical conditions and measures to control	General ventilation: Basic general ventilation (1-3 air changes per hour): 0% (indoor use).
dispersion from source towards the worker:	Outdoors (outdoor use).
	Containment:
	- PROC1: Closed system (minimal contact during routine operations).
	- PROC2: Closed continuous process with occasional controlled exposure.
	- PROC4, PROC8b: Semi-closed process with occasional controlled exposure.
	- PROC8a, PROC10, PROC11, PROC13: No.
	Local exhaust ventilation: Not required.
	Local exhaust ventilation (for dermal): Not required.
	Occupational Health and Safety Management System: Basic.
Conditions and measures related to personal	Respiratory protection:
protection, hygiene and health evaluation:	- PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC13; Not required.
·····	- PROC10. PROC11: Yes (Respirator with APF of 10) (Effectiveness Inhalation: 90%).
	Dermal protection: Yes (chemically resistant gloves conforming to FN374 with basic
	employee training) (minimum efficiency dermal: 90%)
Additional good practice advice. Obligations	Generally accepted standards of occupational bygiene are maintained
according to Article 37(4) of REACH do not	Minimisation of manual phases/work tasks
apply:	Minimisation of enlactes and enills
appiy.	Avoidance of contact with contaminated tools and objects
	Regular cleaning of equipment and work area
	Training staff on good practice
	Management/supervision in place to shock that PMMs in place are being used correctly and
	East tasks where potential enlactics may arise, the following personal protective equipment is
	For tasks where potential splashes may arise, the following personal protective equipment is
	appropriate light weight barrier materials (a g. coveralle)
	appropriate light-weight barrier materials (e.g. coverails).
General:	All risk management measures utilised must also comply with all relevant local regulations.
Product characteristics:	Physical state: liquid.
<u> </u>	Vapour pressure: 0,0305 Pa at 25 °C
Amounts used:	Daily wide dispersive use: 0,000033 tons/day.
	Percentage of tonnage used at regional scale: 10 %.
Frequency and duration of use:	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use.
Frequency and duration of use: Environmental factors not influenced by risk	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default).
Frequency and duration of use: Environmental factors not influenced by risk management:	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default).
Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default). Professional use.
Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure:	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default). Professional use. Indoor/Outdoor use.
Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure:	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default). Professional use. Indoor/Outdoor use. Release fraction to air from process (initial release): 1.00; (final release): 1.00.
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Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure:	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default). Professional use. Indoor/Outdoor use. Release fraction to air from process (initial release): 1.00; (final release): 1.00. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 0,033 kg/day. Release fraction to soil from process (final release): 0,20.
Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default). Professional use. Indoor/Outdoor use. Release fraction to air from process (initial release): 1.00; (final release): 1.00. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 0,033 kg/day. Release fraction to soil from process (final release): 0,20. Dry sludge application to agricultural soil: Yes (default).
Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default). Professional use. Indoor/Outdoor use. Release fraction to air from process (initial release): 1.00; (final release): 1.00. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 0,033 kg/day. Release fraction to soil from process (final release): 0,20. Dry sludge application to agricultural soil: Yes (default).
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Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Conditions and measures related to municipal	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default). Professional use. Indoor/Outdoor use. Release fraction to air from process (initial release): 1.00; (final release): 1.00. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 0,033 kg/day. Release fraction to soil from process (final release): 0,20. Dry sludge application to agricultural soil: Yes (default). Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90,9%).
Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Conditions and measures related to municipal sewage treatment plant:	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default). Professional use. Indoor/Outdoor use. Release fraction to air from process (initial release): 1.00; (final release): 1.00. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 0,033 kg/day. Release fraction to soil from process (final release): 0,20. Dry sludge application to agricultural soil: Yes (default). Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90,9%). Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town).
Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Conditions and measures related to municipal sewage treatment plant: Conditions and measures related to external	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default). Professional use. Indoor/Outdoor use. Release fraction to air from process (initial release): 1.00; (final release): 1.00. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 0,033 kg/day. Release fraction to soil from process (final release): 0,20. Dry sludge application to agricultural soil: Yes (default). Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90,9%). Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town). Particular considerations on the waste treatment operations: No (low risk) (ERC based
Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Conditions and measures related to municipal sewage treatment plant: Conditions and measures related to external treatment of waste for disposal:	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default). Professional use. Indoor/Outdoor use. Release fraction to air from process (initial release): 1.00; (final release): 1.00. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 0,033 kg/day. Release fraction to soil from process (final release): 0,20. Dry sludge application to agricultural soil: Yes (default). Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90,9%). Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town). Particular considerations on the waste treatment operations: No (low risk) (ERC based assessment demonstrating control of risk with default conditions. Low risk assumed for
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Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Conditions and measures related to municipal sewage treatment plant: Conditions and measures related to external treatment of waste for disposal: Conditions and measures related to external	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default). Professional use. Indoor/Outdoor use. Release fraction to air from process (initial release): 1.00; (final release): 1.00. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 0,033 kg/day. Release fraction to soil from process (final release): 0,20. Dry sludge application to agricultural soil: Yes (default). Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90,9%). Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town). Particular considerations on the waste treatment operations: No (low risk) (ERC based assessment demonstrating control of risk with default conditions. Low risk assumed for waste life stage. Waste disposal according to national/local legislation is sufficient.) External recovery and recycling of waste should comply with applicable local and/or national
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Frequency and duration of use: Environmental factors not influenced by risk management: Other given operational conditions affecting environmental exposure: Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Conditions and measures related to municipal sewage treatment plant: Conditions and measures related to external treatment of waste for disposal: Conditions and measures related to external treatment of waste Additional good practice advice. Oblications	Percentage of tonnage used at regional scale: 10 %. Wide dispersive use. Flow rate of receiving surface water: >=18,000 m3/day (default). Professional use. Indoor/Outdoor use. Release fraction to air from process (initial release): 1.00; (final release): 1.00. Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00. Local release rate: 0,033 kg/day. Release fraction to soil from process (final release): 0,20. Dry sludge application to agricultural soil: Yes (default). Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90,9%). Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town). Particular considerations on the waste treatment operations: No (low risk) (ERC based assessment demonstrating control of risk with default conditions. Low risk assumed for waste life stage. Waste disposal according to national/local legislation is sufficient.) External recovery and recycling of waste should comply with applicable local and/or national regulations. All risk management measures utilised must also comply with all relevant local regulations.
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Information for contributing scenario (1): PROC4, PROC8b, PROC11, PROC13

Assessment method: PROC1, PROC2, PROC4, PROC8b, PROC10, PROC11, PROC13: ECETOC TRA v3. PROC8a: ECETOC TRA v3 for dermal exposures. Advanced REACH Tool (ART v1.5) for inhalation exposure. Only highest figures are presented here.

Exposure countation.						
		Route	Exposure es	stimate	RCR	Notes
Worker, long-term, syster	nic	Dermal	1,071 mg/kg	bw/day	0,412	PROC11
Worker, long-term, syster	nic	Inhalation	3,537 mg/m3	3	0,694	PROC4, PROC8b (indoors), PROC13 (indoors)
Worker, long-term, syster	nic	Combined routes	N/A		0,799	PROC8b (indoors), PROC13 (indoors)
Worker, acute, systemic		Inhalation	70,75 mg/m3	3	0,694	PROC4, PROC8b (indoors), PROC13 (indoors)
Worker, acute, systemic		Combined routes	N/A		0,694	PROC4, PROC8b (indoors), PROC13 (indoors)
Environment						
Information for contributing	g scenario	(2): ERC8d				
Assessment method: CHE	SAR V2.	l.				
Exposure estimation:						
Compartment		PEC		<u>RCR</u>	<u>Notes</u>	
Freshwater		0,0004839 mg/L		0,029	ERC8d	
Freshwater sediment		0,307 mg/kg dw		0,029	ERC8d	
Marine water		0,0000469 mg/L		0,028	ERC8d	
Marine water sediment		0,03 mg/kg dw		0,028	ERC8d	
Soil		0,04 mg/kg dw		0,019	ERC8d	
STP		0,002 mg/L		<0,01	ERC8d	
Man via environment		0,000007276 mg/m 0,0004288 mg/kg k	n3 / ow/day	<0,01 / <0,01	Inhalation / Oral (ERC8d)
Man via environment-Combined N routes		N/A		<0,01	ERC8d	
RCR=Risk characterization	n ratio (PE	C/PNEC or Exposu	re estimate/D	NEL); PEC=Pred	icted environmental	concentration.
4. Guidance to the Downs	tream Use	er to evaluate wheth	ner he works i	inside the bound	aries set by the ES	
Health:	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Indoor/outdoor use, without LEV, with gloves. Duration: PROC1: <8 hours/day. PROC10: <4 hours/day. PROC2, PROC4, PROC8a, PROC8b, PROC11, PROC13: <1 hour/day. Respiratory protection: PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC13: Not required. PROC10, PROC11: Yes (Respirator with APF of 10) (Effectiveness Inhalation: 90%). Concentration of substance: PROC1: 5-25%. PROC2, PROC4, PROC8a, PROC8b, PROC10, PROC10: 1-5%. PROC11: <1%.					
Environment:	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.					

Exposure scenario (7): Use by professional workers - Professional use of polishes and wax blends

1. Exposure scenario (7)

Short title of the exposure scenario:

Use by professional workers - Professional use of polishes and wax blends

List of use descriptors:

Sector of use category (SU): SU0 Product category (PC): PC31 Process category (PROC): PROC2, PROC8a, PROC8b, PROC10, PROC11. Environmental release category (ERC): ERC8a, ERC8d

List of names of contributing worker scenarios and corresponding PROCs:

PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities. Transfer includes loading, filling, dumping,

bagging and weighing.

PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities. Transfer includes loading, filling, dumping, bagging. PROC10 Roller application or brushing. This includes application of paints, coatings, removers, adhesives or cleaning agents to surfaces with potential exposure arising from splashes.

PROC11 Non industrial spraying. Air dispersive techniques i.e. dispersion into air (= atomization) by e.g. pressurized air, hydraulic pressure or centrifugation, applicable for liquids and powders.

Name of contributing environmental scenario and corresponding ERCs:

ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor).

ERC8d Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor).

Further explanations:

PC31 Polishes and wax blends.

2. Conditions of use affecting exposure

For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/information_requirements_r12_en.pdf).

2.1 Control of workers exposure				
General:	Generally accepted standards of occupational hygiene are maintained. Smoking, eating and drinking are prohibited at the workplace. Spills are cleaned immediately. Gloves are			
	drinking are prohibited at the workplace. Spills are cleaned immediately. Gloves are			
	considered. Respiratory protection: PROC10, PROC11: Yes (Respirator with APF of 10)			
	(Effectiveness Inhalation: 90%).			
Product characteristics:	Concentration of substance:			
	- PROC2, PROC8a, PROC8b, PROC10: 1-5%.			
	- PROC11: <1%.			
	Physical state: liquid.			
	Vapour pressure: 0,0305 Pa at 25 °C			
	Viscosity: Liquids with medium viscosity.			
Amounts used:	Application rate (for inhalation exposure): PROC8a: 1-10 L/minute.			
Frequency and duration of use/exposure:	Duration:			
	- PROC10: <4 hours/day.			
	- PROC2, PROC8a, PROC8b, PROC11: <1 hour/day.			
Human factors not influenced by risk	Exposed skin surface:			
management:	- PROC2: 480 cm2 (two hands, face side only).			
	- PROC8a, PROC8b, PROC10: 960 cm2 (two hands).			
	- PROC11: 1500 cm2 (two hands and upper wrists).			
Other given operational conditions affecting	Location:			
workers exposure:	- PROC2: Indoor use.			
	- PROC8a, PROC8b, PROC10, PROC11: Indoor/outdoor use.			
	Domain: Professional use.			
	Process temperature (for liquid):			
	 PROC2, PROC8a (dermal exposure), PROC8b, PROC10, PROC11: <=40°C. 			
	- PROC8a (inhalation exposure): 15-25 °C.			
	Assessment tool used:			
	- PROC2, PROC8b, PROC10, PROC11: ECETOC TRA Worker v3 for inhalation and dermal			
	exposure.			
	- PROC8a: ECETOC TRA Worker v3 for dermal exposures. Advanced REACH Tool (ART			
	v1.5) for inhalation exposure.			
Technical conditions and measures at process	Activity class - subclass (ART v1.5): PROC8a: Transfer of liquid products - falling liquids.			
level (source) to prevent release:	Containment: open process - splash loading. Process not fully enclosed but demonstrable			
	and effective housekeeping practices in place.			
Technical conditions and measures to control	General ventilation: Basic general ventilation (1-3 air changes per hour): 0% (indoor use).			
dispersion from source towards the worker:	Outdoors (outdoor use).			
	Containment:			
	 PROC2: Closed continuous process with occasional controlled exposure. 			
	- PROC8b: Semi-closed process with occasional controlled exposure.			
	- PROC8a, PROC10, PROC11: No.			
	Local exhaust ventilation: Not required.			
	Local exhaust ventilation (for dermal): Not required.			
	Occupational Health and Safety Management System: Basic.			

Conditions and measures related to personal	Respiratory protection:
protection, hygiene and health evaluation:	- PROC2, PROC8a, PROC8b: Not required.
	- PROC10, PROC11: Yes (Respirator with APF of 10) (Effectiveness Inhalation: 90%).
	Dermal protection: Yes (chemically resistant gloves conforming to EN374 with basic
	employee training) (minimum efficiency dermal: 90%).
Additional good practice advice. Obligations	Generally accepted standards of occupational hygiene are maintained.
according to Article 37(4) of REACH do not	Minimisation of manual phases/work tasks.
apply:	Minimisation of splashes and spills.
	Avoidance of contact with contaminated tools and objects.
	Regular cleaning of equipment and work area.
	Training staff on good practice.
	Management/supervision in place to check that RMMs in place are being used correctly and
	OCs followed.
	For tasks where potential splashes may arise, the following personal protective equipment is
	recommended: face shield, substance/task appropriate gloves and full skin coverage with
	appropriate light-weight barrier materials (e.g. coveralls).
2.2 Control of environmental exposure	
General:	All risk management measures utilised must also comply with all relevant local regulations.
Product characteristics:	Physical state: liquid.
	Vapour pressure: 0,0305 Pa at 25 °C
Amounts used:	Daily wide dispersive use: 0,000033 tons/day.
	Percentage of tonnage used at regional scale: 10 %.
Frequency and duration of use:	Wide dispersive use.
Environmental factors not influenced by risk	Flow rate of receiving surface water: >=18,000 m3/day (default).
management:	
Other given operational conditions affecting	Professional use.
environmental exposure:	Indoor/Outdoor use.
	Release fraction to air from process (initial release): 1.00; (final release): 1.00.
	Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00.
	Local release rate: 0,033 kg/day.
	Release fraction to soil from process (final release): 0,20.
Technical onsite conditions and measures to	Dry sludge application to agricultural soil: Yes (default).
reduce or limit discharges, air emissions and	
releases to soil:	
Conditions and measures related to municipal	Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90,9%).
sewage treatment plant:	Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town).
Conditions and measures related to external	Particular considerations on the waste treatment operations: No (low risk) (ERC based
treatment of waste for disposal:	assessment demonstrating control of risk with default conditions. Low risk assumed for
	waste life stage. Waste disposal according to national/local legislation is sufficient.)
Conditions and measures related to external	External recovery and recycling of waste should comply with applicable local and/or national
recovery of waste:	regulations.
Additional good practice advice. Obligations	All risk management measures utilised must also comply with all relevant local regulations.
according to Article 37(4) of REACH do not	
apply:	
3. Exposure estimation and reference to its source	Ce
Health	
Information for contributing scenario (1): PROC8b), PROC11

Assessment method: PROC2, PROC8b, PROC10, PROC11: ECETOC TRA v3. PROC8a: ECETOC TRA v3 for dermal exposures. Advanced REACH Tool (ART v1.5) for inhalation exposure. Only highest figures are presented here.

Exposure estimation:

	<u>Route</u>	Exposure estimate	<u>RCR</u>	<u>Notes</u>
Worker, long-term, systemic	Dermal	1,071 mg/kg bw/day	0,412	PROC11
Worker, long-term, systemic	Inhalation	3,537 mg/m3	0,694	PROC8b (indoors)
Worker, long-term, systemic	Combined routes	N/A	0,799	PROC8b (indoors)
Worker, acute, systemic	Inhalation	70,75 mg/m3	0,694	PROC8b (indoors)
Worker, acute, systemic	Combined routes	N/A	0,694	PROC8b (indoors)

Environment

Information for contributing scenario (2): ERC8d

Assessment method: CHESAR V2.1.

Exposure estimation:

Compartment	PEC		RCR	Notes	
Freshwater	0004839	mg/L	0,029	ERC8d	
Freshwater sediment	0,307 mg	/kg dw	0,029	ERC8d	
Marine water	0,000046	9 mg/L	0,028	ERC8d	
Marine water sediment	0,03 mg/	kg dw	0,028	ERC8d	
Soil	0,04 mg/	kg dw	0,019	ERC8d	
STP	0,002 mg	/L	<0,01	ERC8d	
Man via environment	0,00007	276 mg/m3 /	<0,01 / <0,01	Inhalation / Oral (ERC8d)	
	0,000428	8 mg/kg bw/day			
Man via environment-Co	mbined N/A		<0,01	ERC8d	
routes					
RCR=Risk characterizatio	n ratio (PEC/PNEC	or Exposure estima	te/DNEL); PEC=Pred	icted environmental concentration.	
4. Guidance to the Downs	tream User to evalu	ate whether he wo	orks inside the bound	aries set by the ES	
Environment:	Conditions outlined are adopted, then u without LEV, with gl Concentration of su Guidance is based necessary to define can be achieved us	in Section 2 are im sers should ensure oves. Duration: PF ostance: PROC2, F on assumed operat appropriate site-sp ng onsite/offsite tee	plemented. Where oth that risks are manage ROC10: <4 hours/day. PROC8a, PROC8b, Pl ing conditions which n pecific risk management chnologies, either alor	er Risk Management Measures/Operational Conditions ed to at least equivalent levels. Indoor/outdoor use, PROC2, PROC8a, PROC8b, PROC11: <1 hour/day. ROC10: 1-5%. PROC11: <1%. nay not be applicable to all sites; thus, scaling may be nt measures. Required removal efficiency for wastewater the or in combination. If scaling reveals a condition of	
	unsafe use (i.e., RC	Rs > 1), additional	RMMs or a site-specit	fic chemical safety assessment is required.	
Exposure scenario (8): l	Jse by profession	al workers - Profe	essional end-use of	cosmetics	
1. Exposure scenario (8)					
Short title of the exposure	scenario:				
Use by professional work	ers - Professional er	nd-use of cosmetics	6		
List of use descriptors: Sector of use category (S Product category (PC): P	5U): SU0 C28, PC39				
Environmental release ca	tegory (ERC): ERC8	Ba			
Name of contributing envi ERC8a Widespread use	ronmental scenario	and corresponding essing aid (no inclu	J ERCs: sion into or onto article	e, indoor).	
Further explanations:					
PC28 Perfumes, fragrances.					
PC39 Cosmetics, personal care products. For cosmetic and personal care products, risk assessment only required for the onvironment under PEACH as human health is covered by					
alternative legislation	al care products, risk	assessment only i	required for the enviro	nment under REACH as numan nealth is covered by	
Professional application.					
For further information on stand Chapter R.12: Use descriptor sy	ardized use descriptors s /stem (http://guidance.ec	ee the European Chem na.europa.eu/docs/guid	nical Agency (ECHA) Guida lance_document/informatio	nce on information requirements and chemical safety assessment, n_requirements_r12_en.pdf).	
2. Conditions of use affec	ting exposure				
2.1 Control of workers exp	osure				
General:		For cosmetic under REACH	and personal care pro I as human health is c	ducts, risk assessment only required for the environment covered by alternative legislation.	
2.2 Control of environmen	tal exposure				
General:		All risk manag	gement measures utilis	sed must also comply with all relevant local regulations.	
Product characteristics:		Physical state	e: liquid.	0	
Amounto upod:		Vapour press	ure: 0,0305 Pa at 25		
		Percentage or	f tonnage used at regi	onal scale: 10 %.	
Frequency and duration of	of use:	Wide dispersi	ve use.		
Environmental factors no	t influenced by risk	Flow rate of re	eceiving surface water	r: >=18000 m3/day (default).	
management:	-		-	· · · · ·	

Other given operational conditions affe	ecting Professional us	Professional use.			
environmental exposure.	Release fraction	on to air from process (initial release): 1,00; (final release): 1,00.			
	Release fraction	on to wastewater from process (initial release): 1.00; (final release): 1.00.			
	Local release ra	rate: 0.006 kg/day.			
The share share the second data and second second	Release fraction	on to soil from process (final release): 0,0.			
I echnical onsite conditions and measured use or limit discharges, air emission	Dry sludge appl	Dication to agricultural soil: Yes (default).			
releases to soil:					
Conditions and measures related to m	nunicipal Municipal Sewa	Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90,9%).			
sewage treatment plant:	Size of municip	Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town).			
treatment of waste for disposal:	assessment de	Particular considerations on the waste treatment operations: No (low risk) (ERC based assessment demonstrating control of risk with default conditions. Low risk assumed for			
	waste life stage	e. Waste disposal according to national/local legislation is sufficient.)			
Conditions and measures related to ex recovery of waste:	xternal External recove regulations.	ery and recycling of waste should comply with applicable local and/or national			
Additional good practice advice. Oblig	ations All risk manage	ement measures utilised must also comply with all relevant local regulations.			
according to Article 37(4) of REACH d	lo not				
apply:					
3. Exposure estimation and reference t	to its source				
Environment					
Accessment method: CHESAR V2.1): ERCoa				
Assessment method. CheSAR V2.1.					
Exposure estimation:	EC	PCP Notes			
<u>Compartment</u>	<u>eo</u>				
Freshwater 0,	0003598 mg/L	0,021			
Freshwater sediment 0,	228 mg/kg dw	0,021			
Marine water sediment	022 mg/kg dw	0.02			
	009 mg/kg dw	<0.01			
	0002504 mg/l	<0,01			
Man via anviranment	00002304 mg/L				
	000282 mg/kg bw/day				
Man via environment-Combined N/	/A	<0,01			
routes					
RCR=Risk characterization ratio (PEC/	PNEC or Exposure estimate	e/DNEL); PEC=Predicted environmental concentration.			
4. Guidance to the Downstream User t	to evaluate whether he work	rks inside the boundaries set by the ES			
Environment: Guidance is	based on assumed operatin	ng conditions which may not be applicable to all sites; thus, scaling may be actic risk management measures. Required removal efficiency for wastewater			
can be achie	eved using onsite/offsite tech	hnologies, either alone or in combination. If scaling reveals a condition of			
unsafe use (i	i.e., RCRs > 1), additional R	RMMs or a site-specific chemical safety assessment is required.			
Exposure scenario (9): Consumer us	se - Consumer end-use o	of washing and cleaning products			
1. Exposure scenario (9)					
Short title of the exposure scenario:					
Consumer use - Consumer end-use of	f washing and cleaning prod	ducts			
List of use descriptors:					
Froduct category (FG): FG30					
Name of contributing environmental ac	J. ERUOZ, ERUOU	EDCe			
FRC8a Widespread use of non-reactive	e processing aid (no inclusion	sion into or onto article indoor)			
ERC8d Widespread use of non-reactiv	ve processing aid (no inclusio	sion into or onto article, outdoor).			
Further explanations:					

PC35 Washing and cleaning products.

- CS1: Laundry and dishwashing products.

- AISE C1 Laundry regular (powder, liquid).

- AISE C2 Laundry compact (powder, liquid/gel, tablet).

- AISE C3 Fabric conditioners (liquid regular, liquid concentrate).

- AISE C4 Laundry additives (powder bleach, liquid bleach, tablet).
- AISE C5 Hand dishwashing (liquid regular, liquid concentrate).
- AISE C6 Machine dishwashing (powder, liquid, tablet).
- AISE C12 Laundry aids (roning aids-starch spray, ironing aids-other).
- CS2: Cleaners, liquids (all-purpose cleaners, sanitary products, floor cleaners, glass cleaners, carpet cleaners, metal cleaners).
- AISE C7 Surface cleaners (liquid, powder, gel neat).
- AISE C8 Toilet cleaners (powder, liquid, gel, tablet).
- AISE C11 Carpet cleaners (liquid).
- AISE C15 Wipes (bathroom, kitchen, floor).
- AISE C21 High pressure washers/cleaners (liquid).
- AISE C22 Automotive care (liquid).
- CS3: Cleaners, trigger sprays (all-purpose cleaners, sanitary products, glass cleaners).
- AISE C7 Surface cleaners (spray neat).
- AISE C10 Oven cleaners (trigger spray).
- AISE C11 Carpet cleaners (spray).
- AISE C22 Automotive care (spray).

For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/information_requirements_r12_en.pdf).

2. Conditions of use affecting exposure	
2.1 Control of consumer exposure	
Product characteristics:	Concentration of substance (F1 x 100): Unless otherwise stated, covers concentrations up
	to 3%.
	- AISE C12 (spray): up to 2,0%.
	- AISE C1 (powder), C2 (powder): up to 1,0%.
	- AISE C7 (gel neat), C15, C22 (liquid): up to 0,75%.
	- AISE C1 (liquid), C2 (liquid/gel), C4 (powder bleach, liquid bleach): up to 0,70%.
	- AISE C7 (spray neat), C10 (trigger spray), C11 (spray), C22 (spray): up to 0,20%.
	Physical state: liquid.
	Vapour pressure: 0,0305 Pa at 25 °C
	Oral contact foreseen: Unless otherwise stated, No.
	- AISE C5, C6: Yes.
	Spray: Unless otherwise stated, No.
	- AISE C7 (spray neat), C10 (trigger spray), C11 (spray), C12 (spray), C22 (spray): Yes.
Amounts used:	Use amounts:
	- Total mass sprayed per use (C'): AISE C12 (spray): 20000 mg/task. AISE C7 (spray neat),
	C10 (trigger spray), C11 (spray), C22 (spray): 35000 mg/task.
	- Concentration in wash solution (C): Hand wash-AISE C1, C2, C3, C4: 10 mg/cm3.
	Pretreatment-AISE C1 (powder), C2 (powder): 600 mg/cm3. Pretreatment-AISE C1 (liquid),
	C2 (liquid/gel), C4 (liquid bleach): 1000 mg/cm3. Hand dishwashing-AISE C5: 1 mg/cm3.
	AISE C7 (powder), C8 (powder, tablet): 8 mg/cm3. AISE C7 (liquid), C8 (liquid, gel), C11
	(liquid), C22 (liquid): 22 mg/cm3. AISE C7 (gel neat, spray neat), C10 (trigger spray), C11
	(spray), C15, C21, C22 (spray): 1000 mg/cm3.
	- Amount of undiluted final product used (M): AISE C1 (powder): 290 g. AISE C1 (liquid): 230
	g. AISE C2 (powder): 200 g. AISE C2 (liquid/gel), C3 (liquid regular): 140 g. AISE C2
	(tablet): 135 g. AISE C3 (liquid concentrate): 90 g. AISE C4 (powder bleach): 70 g. AISE C4
	(liquid bleach): 100 g. AISE C4 (tablet): 30 g. AISE C12 (spray): 20 g.
	 Concentration in product (oral exposure)(Cp): AISE C5, C6: 1 mg/mL.
Frequency and duration of use/exposure:	Duration covers exposure up to (T): AISE C7 (spray neat), C10 (trigger spray), C11 (spray),
	C22 (spray): 4 hours/event. AISE C12 (spray): 1 hour/event.
	Frequency - covers use frequency (n): Hand wash-AISE C2 (powder), Hand dishwashing-
	AISE C5: up to 3 times/day. Hand wash-AISE C1 (powder): up to 2,6 times/day. AISE C8,
	C11 (liquid): up to 2 times/day. Hand wash-AISE C1 (liquid), C2 (liquid/gel, tablet), C3: up to
	1,4 times/day. AISE C7, C10 (trigger spray), C11 (spray), C12 (spray), C15, C21, C22: up to
	1 time/day. Hand wash-AISE C4: up to 0,6 times/day. Pretreatment-AISE C1 (powder,
	liquid), C2 (powder, liquid/gel), C4 (liquid bleach): up to 0.5 times/day.

Other given operational conditions affecting	Location: Indoor/outdoor use.
consumers exposure:	Body weight (BW): 60 kg.
	Inhalation exposure model (C"): AISE C7 (spray neat), C10 (trigger spray), C11 (spray),
	C12 (spray): covers use in room size of 20 m3. AISE C22 (spray): covers use in room size
	of 34 m3.
	Skin contact area (Sder): Unless otherwise stated, covers skin contact area up to 857.5
	cm2.
	- Handwash-AISE C1 C2 C3 C4 C5 up to 2082 5 cm2
	- Indirect skin contact-AISE C1_C2_C3_C4: up to 14315 cm2
	- AISE C21, C22 (liquid): up to 875.5 cm^2
	Thickness of product layer in contact with skin. (Tder): 0.01 cm
	Fraction of product layer in contact with skin (F2): Unless otherwise stated 1. Indirect skin
	contact-AISE C1 C2 C3 C4 C12 (spray): 0.01
	Eraction remaining on skin (F3): 1
	Fraction remaining on skill (10). 1.
	Fraction of liquor romaining in final liquor ofter final animping (fraction)/(E) (AISE C1, C2, C3, C4, C, C2, C3
	04. 0,0. Total fabric weight (M): AISE 01. 02. 03. 04: 2500 a
	Total labic weight (w). AISE C1, C2, C3, C4, 3500 g.
	Fabric density (FD): AISE C1, C2, C3, C4: 10 mg/cm2.
	Amount of water left on dishes after rinsing (1a): AISE C5, C6: 0,000055 mL/cm2.
	Area of dishes in daily contact with food (Sa): AISE C5, C6: 5400 cm2.
Conditions and measures related to information	Assessment tool used: AISE REACT Consumer Tool. Inhalation exposures were assessed
and behavioral advice to consumers:	for consumer products applied by spraying (AISE C7 (spray neat), C10 (trigger spray), C11
	(spray), C12 (spray), C22 (spray)). Dermal exposures from the consumer use of cleaning
	and washing products included direct skin contact from use and for some uses (AISE C1,
	C2, C3, C4, C12) indirect skin contact (e.g. wearing washed clothes). Oral exposures from
	the consumer use of cleaning products included indirect oral exposures to residues on
	dishes hand-washed or machine-washed (AISE C5, C6).
2.2 Control of environmental exposure	
General:	All risk management measures utilised must also comply with all relevant local regulations.
Product characteristics:	Physical state: liquid.
	Vapour pressure: 0,0305 Pa at 25 °C
Amounts used:	Daily wide dispersive use: 0,000011 tons/day.
	Percentage of tonnage used at regional scale: 10 %.
Frequency and duration of use:	Wide dispersive use.
Environmental factors not influenced by risk	Flow rate of receiving surface water: >=18000 m3/day (default).
management:	
Other given operational conditions affecting	Indoor/Outdoor use.
environmental exposure:	Consumer use.
	Release fraction to air from process (initial release): 1,00; (final release): 1,00.
	Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00.
	Local release rate: 0,011 kg/day.
	Release fraction to soil from process (final release): 0.20.
Technical onsite conditions and measures to	Dry sludge application to agricultural soil: Yes (default).
reduce or limit discharges, air emissions and	,
releases to soil:	
Conditions and measures related to municipal	Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90.9%)
sewage treatment plant:	Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town).
Conditions and measures related to external	Particular considerations on the waste treatment operations: No (low risk) (ERC based
treatment of waste for disposal:	assessment demonstrating control of risk with default conditions. Low risk assumed for
	waste life stage. Waste disposal according to national/local legislation is sufficient.)
Conditions and measures related to external	External recovery and recycling of waste should comply with applicable local and/or pational
recovery of waste:	regulations
Additional good practice advice Obligations	All risk management measures utilised must also comply with all relevant local regulations
	An nak management measures utilised must also compty with all relevant local regulations.
appiy.	
3. Exposure estimation and reference to its source	Ce
Health	

Information for contributing scenario (1): AISE C5, C6, C7 (gel neat, spray neat), C12 (spray), C15, C21

Assessment method: AISE REACT Consumer Tool. Only highest figures are presented here.

	Route	Exposure e	estimate	RCR	Notes
Consumer, short-term, systemic	Inhalation	20 mg/m3		0,80	AISE C12 (spray)
Consumer, short-term, systemic	Oral	0,000149 n	ng/kg bw/day	0,0000019	AISE C5, C6
Consumer, short-term, systemic	Combined routes	N/A		0,80	AISE C12 (spray)
Consumer, long-term, systemic	Dermal	1,072 mg/kg bw/day		0,825	AISE C7 (gel neat, spray neat), C15, C21
Consumer, long-term, systemic	Inhalation	0,833 mg/n	n3	0,667	AISE C12 (spray)
Consumer, long-term, systemic	Oral	0,000149 n	ng/kg bw/day	0,000371	AISE C5, C6
Consumer, long-term, systemic	Combined routes	N/A		0,825	AISE C7 (gel neat, spray neat), C15, C21
Environment					
Information for contributing scenario	o (2): ERC8d				
Assessment method: CHESAR V2	.1.				
Exposure estimation:					
<u>Compartment</u>	PEC		RCR	<u>Notes</u>	
Freshwater	0,0003846 mg/L		0,023	ERC8d	
Freshwater sediment	0,244 mg/kg dw		0,023	ERC8d	
Marine water	0,00003698 mg/L		0,022	ERC8d	
Marine water sediment	0,023 mg/kg dw		0,022	ERC8d	
Soil	0,015 mg/kg dw		<0,01	ERC8d	
STP	0,0005007 mg/L		<0,01	ERC8d	
Man via environment	0,000007273 mg/n 0,0003113 mg/kg l	n3 / bw/day	<0,01 / <0,01 (ERC8d)	Inhalation / Oral	
Man via environment-Combined	N/A		<0.01	ERC8d	

routes

RCR=Risk characterization ratio (PEC/PNEC or Exposure estimate/DNEL); PEC=Predicted environmental concentration.

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

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Health:	Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Potential inhalation, dermal and oral exposures to benzyl benzoate arising from consumer use of cleaning and washing products which contain this substance up to 3 % were assessed using the AISE REACT consumer tool using the following modified algorithms to derive consumer use exposures. INHext = (F1 x C)/C" x (T/24). Key: INHext: External inhalation concentration (mg/m3); F1: Ingredient fraction by weight (fraction); C': Total mass sprayed per use (mg/task); C": Room volume (m3); T: Duration of exposure (hours) Inhalation, systemic effects, long-term exposures: INHext = (F1 x C')/C". Key: INHext: External inhalation concentration (mg/m3); F1: Ingredient fraction by weight (fraction); C': Total mass sprayed per use (mg/task); C": Room volume (m3) Dermal, systemic effects, long-term exposures (direct skin contact): DERMsys = (F1 x C x Tder x F2 x F3 x Sder x n)/BW. Key: DERMsys: Systemic dose following dermal exposures (mg/kg bw/day); F1: Ingredient fraction by weight (fraction); C: Concentration in wash solution (mg/cm3); Tder: Thickness of product layer in contact with skin (cm); F2: Fraction of product layer in contact with skin (cm); F3: Fraction remaining on skin; Sder: Surface area exposed skin (cm2); n: Daily frequency of product use; BW: Bodyweight (kg) Dermal, systemic effects, long-term exposures (indirect skin contact (e.g. wearing washed clothes)): DERMsys = (F1 x M x (F/W) x FD x FL) x Sder x F2 x F3/BW. Key: DERMsys: Systemic dose following dermal exposures (mg/kg bw/day); F1: Ingredient fraction by weight (fraction); M: Amount of undiluted product used (g); F1: Fraction of product layer in contact with skin (cm); F3: Fraction remaining in fainal iliquor before spinning (fraction); Sder: S
Environment:	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.
Exposure scenario (10)	Consumer use - Consumer end-use of air care products
1. Exposure scenario (10)
Short title of the exposure	er end-use of air care products
List of use descriptors	
Product category (PC): F	PC3
Environmental release ca	ategory (ERC): ERC8a
Name of contributing env	ironmental scenario and corresponding ERCs:
ERC8a Widespread use	of non-reactive processing aid (no inclusion into or onto article, indoor).
Further explanations:	
PC3 Air care products:	
- CS1: AISE C17 Air fres	heners aerosol (aqueous, non-aqueous).
- CS2: AISE C18 Air fres	heners non aerosol (perfume in/on solid substrate, diffusers (heated+electrical), candles).
Chapter R.12: Use descriptor s	varialized use descriptions see the European Chemical Agency (ECRA) Guidance on information requirements and Chemical safety assessment, ystem (http://guidance.echa.europa.eu/docs/guidance_document/information_requirements_r12_en.pdf).
2. Conditions of use affect	ting exposure
2.1 Control of consumer of	exposure
Product characteristics:	Concentration of substance (F1 x 100): Unless otherwise stated, covers concentrations up to 3%.

- AISE C17 (aqueous): up to 0,8%.
- AISE C17 (non-aqueous): up to 1,0%.
Physical state: liquid.
Vapour pressure: 0,0305 Pa at 25 °C

Oral contact foreseen: No.

Amounts used:	Use amounts: Total mass sprayed per use (C'): - AISE C17 (aqueous): 8400 mg/task. - AISE C17 (non-aqueous): 5400 mg/task. - AISE C18 (perfume in/on solid substrate): 1,74 mg/task. - AISE C18 (diffusers (heated +electrical), candles): 0,72 mg/task. Time weight average concentration predicted using the BAMA indoor air single spray model (TWA BAMA): - AISE C17 (aqueous): 2647,8 mg/m3. - AISE C17 (non-aqueous): 1702,1 mg/m3. - AISE C18 (perfume in/on solid substrate): 20,795 mg/m3. - AISE C18 (diffusers (heated +electrical), candles): 1,372 mg/m3.
Frequency and duration of use/exposure:	Duration covers exposure up to (1): AISE C17, C18 (perfume in/on solid substrate): 0.25 hours/event. AISE C18 (diffusers (heated+electrical), candles): 4 hours/event. Frequency - covers use frequency (n): up to 1 time/day.
Other given operational conditions affecting	Inhalation exposure model: AISE C17, AISE C18 (perfume in/on solid substrate); covers
consumers exposure:	use in room size of 2.5 m3. AISE C18 (diffusers (heated+electrical), candles): covers use in
·	room size of 58 m3.
Conditions and measures related to information	Assessment tool used: AISE REACT Consumer Tool and BAMA (British Aerosol
and behavioral advice to consumers:	Manufacturers' Association) Indoor Single Spray Air Model for inhalation exposure.
Conditions and measures related to personal	General ventilation: Unless otherwise stated, ventilation rate: 2 air changes/ hour.
protection and hygiene:	- AISE C18 (diffusers (heated+electrical), candles): 0.5 air changes/ hour.
2.2 Control of environmental exposure	
General:	All risk management measures utilised must also comply with all relevant local regulations.
Product characteristics:	Physical state: liquid.
	Vapour pressure: 0,0305 Pa at 25 °C
Amounts used:	Daily wide dispersive use: 0,000011 tons/day.
	Percentage of tonnage used at regional scale: 10 %.
Frequency and duration of use:	Wide dispersive use.
Environmental factors not influenced by risk management:	Flow rate of receiving surface water: >=18000 m3/day (default).
Other given operational conditions affecting	Indoor use.
environmental exposure:	Consumer use.
	Release fraction to air from process (initial release): 1,00; (final release): 1,00.
	Release fraction to wastewater from process (initial release): 1,00; (final release): 1,00.
	Local release fraction to soil from process (final release): 0.20
Technical analta conditions and macauros to	Dry gludge application to agricultural call: Vec (default)
reduce or limit discharges, air emissions and	Dry sludge application to agricultural soli. Tes (deladit).
releases to soil:	
Conditions and measures related to municipal	Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90.9%).
sewage treatment plant:	Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town).
Conditions and measures related to external	Particular considerations on the waste treatment operations: No (low risk) (ERC based
treatment of waste for disposal:	assessment demonstrating control of risk with default conditions. Low risk assumed for
	waste life stage. Waste disposal according to national/local legislation is sufficient.)
Conditions and measures related to external recovery of waste:	External recovery and recycling of waste should comply with applicable local and/or national regulations.
Additional good practice advice. Obligations according to Article 37(4) of REACH do not apply:	All risk management measures utilised must also comply with all relevant local regulations.
3. Exposure estimation and reference to its source	e
Health	
Information for contributing scenario (1): AISE C17	(aqueous)

Assessment method: AISE REACT Consumer Tool and BAMA (British Aerosol Manufacturers' Association) BAMA Indoor Air Single Spray Model. Only highest figures are presented here.

Exposure estimation:

	Route	Exposure estimate	RCR	<u>Notes</u>
Consumer, short-term, systemic	Inhalation	21,18 mg/m3	0,847	AISE C17 (aqueous)
Consumer, short-term, systemic	Combined routes	N/A	0,847	AISE C17 (aqueous)

		Route	Exposure es	stimate	RCR	Notes
Consumer, long-term, sy	stemic	Inhalation	0,221 mg/m3		0,177	AISE C17 (aqueous)
Consumer, long-term, sy	stemic	Combined routes	N/A		0,177	AISE C17 (aqueous)
Environment						
Information for contributin	g scenario) (2): ERC8a				
Assessment method: CHI	ESAR V2.	1.				
Exposure estimation:						
Compartment		PEC		<u>RCR</u>	<u>Notes</u>	
Freshwater		0,0003846 mg/L		0,023		
Freshwater sediment		0,244 mg/kg dw		0,023		
Marine water		0,00003698 mg/L		0,022		
Marine water sediment		0,023 mg/kg dw		0,022		
Soil		0,015 mg/kg dw		<0,01		
STP		0,0005007 mg/L		<0,01		
Man via environment		0,000007273 mg/m 0,0003113 mg/kg b	n3 / ow/day	<0,01 / <0,01	Inhalation / Or	al
Man via environment-Co routes	mbined	N/A		<0,01		
RCR=Risk characterization	on ratio (PE	EC/PNEC or Exposu	ire estimate/D	NEL); PEC=Prec	licted environme	ntal concentration.
4. Guidance to the Downs	stream Us	er to evaluate whetl	her he works	inside the bound	aries set by the	ES
Environment:	 exposures to benzyl benzoate arising from consumer use of air care products which contain this substance up to 3 % were assessed using the AISE REACT consumer tool and BAMA (British Aerosol Manufacturers' Association) Indoor Air Single Spray Model using the following modified algorithms to derive consumer use exposures. Inhalation, systemic effects, long-term exposures: INHext = F1 x TWA BAMA x (T/24). Key: INHext: External inhalation concentration (mg/m3); F1: Ingredient fraction by weight (fraction); TWA BAMA: Time weighted average concentration predicted using the BAMA indoor air single spray model assuming 100% product (mg/m3); T: Duration o exposure (hours). Inhalation, systemic effects, acute exposures: INHext = F1 x TWA BAMA. Key: INHext: External inhalation concentration (mg/m3); F1: Ingredient fraction by weight (fraction); TWA BAMA: Time weighted average concentration (mg/m3); F1: Ingredient fraction by weight (fraction); TWA BAMA. Key: INHext: External inhalation concentration (mg/m3); F1: Ingredient fraction by weight (fraction); TWA BAMA. Key: INHext: External inhalation concentration (mg/m3); F1: Ingredient fraction by weight (fraction); TWA BAMA: Time weighted average concentration predicted using the BAMA indoor air single spray model assuming 100% product (mg/m3). 					
Exposure scenario (11):	Consum	er use - Consume	r end-use of	f polishes and v	wax blends	
1. Exposure scenario (11)					
Short title of the exposure	scenario					
Consumer use - Consum	ner end-us	e of polishes and wa	ax blends			
Product category (PC): F	PC31 ategory (Fl	RC): FRC8a, FRC8	Ч			
Name of contributing envi	ironmenta	I scenario and corre	~ sponding ER	Cs:		
ERC8a Widespread use	of non-rea	active processing aid	(no inclusion	into or onto artic	le, indoor).	
ERC8d Widespread use	of non-rea	active processing aid	(no inclusion	into or onto artic	e, outdoor).	
Further explanations: PC31 Polishes and wax blends. - CS1: AISE C20 Furniture floor and leather care (waxes and creams, non-spray). - CS2: AISE C20 Furniture floor and leather care (spray liquid)						
For further information on stand	lardized use	descriptors see the Euro	pean Chemical A	Agency (ECHA) Guid	ance on information	requirements and chemical safety assessment,
Chapter R.12: Use descriptor s	ystem (http://	/guidance.echa.europa.e	u/docs/guidance	_document/informatio	on_requirements_r12	2_en.pdf).
2.1 Control of consumer	ang expos exposure	sure				

Product characteristics:	Concentration of substance (F1 x 100): Up to 0,6%.			
	Physical state: liquid.			
	Vapour pressure: 0,0305 Pa at 25 °C			
	Spray: AISE C20 (waxes and creams, non-spray): No. AISE C20 (spray, liquid): Yes.			
Amounts used:	Use amounts:			
	- Total mass sprayed per use (C'): AISE C20 (spray, liquid): 6000 mg/task.			
	- Concentration in wash solution (C): AISE C20 (spray, liquid): 1000 mg/cm3.			
Frequency and duration of use/exposure:	Frequency - covers use frequency (n): up to 1 time/day.			
Human factors not influenced by risk	Dermal transfer factor = 1.			
management:				
Other given operational conditions affecting	Body weight (BW): 60 kg.			
consumers exposure:	Inhalation exposure model (C"): AISE C20 (spray, liquid): covers use in room size of 58 m3.			
	Skin contact area (Sder): AISE C20 (waxes and creams, non-spray): up to 875,5 cm2. AISE			
	C20 (spray, liquid): up to 857,5 cm2.			
	Fraction of product layer in contact with skin (F2): AISE C20 (cpray, liquid): 1			
	Fraction remaining on skin (F3): AISE C20 (spray, liquid): 1			
Conditions and measures related to information	Assessment tool used: AISE C20 (waxes and creams, non-spray): ECETOC TRA 3 model			
and behavioral advice to consumers:	(consumer module) for dermal exposures. AISE C20 (spray, liquid): AISE REACT Consumer			
	Tool for inhalation and dermal exposures.			
2.2 Control of environmental exposure	·			
General:	All risk management measures utilised must also comply with all relevant local regulations.			
Product characteristics:	Physical state: liquid.			
	Vapour pressure: 0,0305 Pa at 25 °C			
Amounts used:	Daily wide dispersive use: 0,000011 tons/day.			
	Percentage of tonnage used at regional scale: 10 %.			
Frequency and duration of use:	Wide dispersive use.			
Environmental factors not influenced by risk	Flow rate of receiving surface water: >=18000 m3/day (default).			
management:				
Other given operational conditions affecting	Indoor/Outdoor use.			
environmental exposure:	Consumer use.			
	Release fraction to wastewater from process (initial release): 1,00, (initial release): 1,00.			
	Local release rate: 0.011 kg/day			
	Release fraction to soil from process (final release): 0.20.			
Technical onsite conditions and measures to	Dry sludge application to agricultural soil: Yes (default).			
reduce or limit discharges, air emissions and				
releases to soil:				
Conditions and measures related to municipal	Municipal Sewage Treatment Plant (STP): Yes (Efficiency=90,9%).			
sewage treatment plant:	Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town).			
Conditions and measures related to external	Particular considerations on the waste treatment operations: No (low risk) (ERC based			
treatment of waste for disposal:	assessment demonstrating control of risk with default conditions. Low risk assumed for			
	waste life stage. Waste disposal according to national/local legislation is sufficient.)			
Conditions and measures related to external	External recovery and recycling of waste should comply with applicable local and/or national			
recovery of waste:	regulations.			
Additional good practive advice. Obligations	All risk management measures utilised must also comply with all relevant local regulations.			
according to Article 37(4) of REACH do hot				
2 Exposure estimation and reference to its course	•			
S. Exposure estimation and reference to its source				
Information for contributing scopario (1): AISE C20) (wayes and creams, non-spray) AISE C20 (spray, liquid)			
Approximation for contributing sociality (1), more one was and organis, non-spray), more one (spray, inquity)				
Assessment method: ECETOC TRA 3 model (con	sumer module); AISE REACT Consumer Tool. Only highest figures are presented here.			
Exposure estimation:				

	<u>Route</u>	Exposure estimate	RCR	Notes
Consumer, short-term, systemic	Inhalation	6,207 mg/m3	0,248	AISE C20 (spray, liquid)
Consumer, short-term, systemic	Combined routes	N/A	0,248	AISE C20 (spray, liquid)

	<u>Route</u>	Exposure estimate	RCR	<u>Notes</u>	
Consumer, long-term, systemic	Dermal	0,858 mg/kg bw/day	0,660	AISE C20 (waxes and creams, non-	
				spray), AISE C20 (spray, liquid)	
Consumer, long-term, systemic	Inhalation	0,259 mg/m3	0,207	AISE C20 (spray, liquid)	
Consumer, long-term, systemic	Combined routes	N/A	0,867	AISE C20 (spray, liquid)	
Environment					
Information for contributing scena	ario (2): ERC8d				
Assessment method: CHESAR \	/2.1.				
Compartment	PEC	DCD	Notes		
<u>Compartment</u>	<u>FEC</u>	0.022	EDC04		
Freshwater and mont	0,0003848 mg/L	0,023	ERCou		
Merine weter	0,244 mg/kg dw	0,023			
Marine water	0,00003698 mg/L	0,022	ERC80		
	0,023 mg/kg dw	0,022	ERC8d		
Soil	0,015 mg/kg dw	<0,01	ERC8d		
STP	0,0005007 mg/L	<0,01	ERC8d		
Man via environment	0,000007273 mg/r 0,0003113 mg/kg	n3 / <0,01 /<0,01 bw/day	Inhalation / Ora	al (ERC8d)	
Man via environment-Combined routes	N/A	<0,01	ERC8d		
RCR=Risk characterization ratio	(PEC/PNEC or Exposi	ure estimate/DNEL); PEC=Pre	edicted environmen	ntal concentration.	
4. Guidance to the Downstream	User to evaluate whet	her he works inside the bour	daries set by the I	ES	
Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational Conditions are adopted, then users should ensure that risks are managed to at least equivalent levels. Potential inhalation and dermal exposures to benzyl benzoate arising from consumer use of polishes and wax blend products which contain this substance up to 0,6 % were assessed using the AISE REACT consumer tool or the ECETOC TRA 3 model (consumer module). Dermal exposures for AISE C20 (wax/cream non-spray) products were assessed using the ECETOC TRA 3 (consumer module). Inhalation and dermal exposures for AISE C20 (spray, liquid) products were assessed using the AISE REACT model using the following modified algorithms to derive consumer use exposures. - Inhalation, systemic effects, long-term exposures: INHext = (F1 x C')/C" x (T/24). Key: INHext: External inhalation concentration (mg/m3); F1: Ingredient fraction by weight (fraction); C': Total mass sprayed per use (mg/task); C": Room volume (m3); T: Duration of exposure (hours). - Inhalation, systemic effects, acute exposures: INHext = (F1 x C')/C". Key: INHext: External inhalation concentration (mg/m3); F1: Ingredient fraction by weight (fraction); C': Total mass sprayed per use (mg/task); C": Room volume (m3) - Dermal, systemic effects, long-term exposures: DERMsys = (F1 x C x Tder x F2 x F3 x Sder x n)/BW. Key: DERMsys: Systemic dose following dermal exposures (mg/kg bw/day); F1: Ingredient fraction by weight (fraction); C: Concentration in wash solution (mg/cm3); Tder: Thickness of product layer in contact with skin (cm); F3: Fraction remaining on skin; Sder: Surface area exposed skin (cm2); n:					
Environment: Guida necess can be unsafe	Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. If scaling reveals a condition of useful use (i.e., PCRs > 1) additional PMMs or a site specific abarried provided to remove the results.				
Exposure scenario (12): Cons		ar and use of coemetice		•	
1. Exposure scenario (12). Const		Frend-use of Cosmetics			
Short title of the exposure scena	rio:				
	···				

Consumer use - Consumer end-use of cosmetics

List of use descriptors:

Product category (PC): PC28, PC39

Environmental release category (ERC): ERC8a

Name of contributing environmental scenario and corresponding ERCs:

ERC8a Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor).

Further explanations:

Consumer uses e.g. as a carrier in cosmetics/personal care products, perfumes and fragrances. Note: For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation.

For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and chemical safety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/information_requirements_r12_en.pdf).

2. Conditions of use affecting expo	sure						
2.1 Control of consumer exposure							
General:		For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation.					
2.2 Control of environmental expos	ure						
General:		All risk manage	All risk management measures utilised must also comply with all relevant local regulations.				
Product characteristics:		Physical state:	liquid.				
		Vapour pressur	apour pressure: 0,0305 Pa at 25 °C				
Amounts used:		Daily wide dispersive use: 0,000011 tons/day.					
		Percentage of tonnage used at regional scale: 10 %.					
Frequency and duration of use:		Wide dispersive	e use.				
Environmental factors not influence	ed by risk	Flow rate of rec	eiving surface wate	er: >=18000 m3/day (default).			
management:		<u> </u>					
Other given operational conditions	affecting	Indoor use.					
environmental exposure.		Consumer use.	n to air from proces	es (initial ralazsa): 1.00: (final ralazsa): 1.00			
		Release fraction	n to wastewater fro	m process (initial release): 1,00, (initial release): 1,00.			
		Local release ra	ate: 0.011 kg/dav.				
		Release fraction	n to soil from proce	ss (final release): 0.			
Technical onsite conditions and ma	easures to	Dry sludge app	lication to agricultur	ral soil: Yes (default).			
reduce or limit discharges, air emis	ssions and						
releases to soil:							
Conditions and measures related t	to municipal	Municipal Sewa	age Treatment Plan	t (STP): Yes (Efficiency=90,9%).			
sewage treatment plant:		Size of municip	al sewage system/	treatment plant: >=2000 m3/day (standard town).			
Conditions and measures related t	to external	Particular considerations on the waste treatment operations: No (low risk) (ERC based					
treatment of waste for disposal:	Int of waste for disposal: assessment demonstrating control of risk with default conditions. Low risk assumed fo waste life stage. Waste disposal according to national/local legislation is sufficient.)			l of risk with default conditions. Low risk assumed for ccording to national/local legislation is sufficient.)			
conditions and measures related to external External recovery and recycling of waste should comply with applicable local and/or			waste should comply with applicable local and/or national				
recovery of waste: regulations.							
Additional good practive advice. Obligations All risk manage			ment measures uti	lised must also comply with all relevant local regulations.			
according to Article 37(4) of REACH do not							
appiy.							
3. Exposure estimation and reference to its source							
Environment							
Information for contributing scenario	o (2): ERC8a						
Assessment method: CHESAR V2.	1.						
Exposure estimation:							
<u>Compartment</u>	PEC		<u>RCR</u>	Notes			
Freshwater	0,0003846 m	g/L	0,023				
Freshwater sediment	0,244 mg/kg	dw	0,023				
Marine water	0,00003698 ı	ng/L	0,022				
Marine water sediment	0,023 mg/kg dw		0,022				
Soil	0,015 mg/kg	dw	<0,01				
STP	0,0005007 mg/L		<0,01				
Man via environment	0,000007273 mg/m3 / 0,0003113 mg/kg bw/day		<0,01 / <0,01	Inhalation / Oral			
Man via environment-Combined routes	N/A		<0,01				
RCR=Risk characterization ratio (P	EC/PNEC or E	xposure estimate	/DNEL); PEC=Pre	dicted environmental concentration.			
4. Guidance to the Downstream Us	ser to evaluate	whether he worl	ks inside the bound	daries set by the ES			
Environment: Guidance	e is based on a	ssumed operatin	a conditions which	may not be applicable to all sites; thus, scaling may be			

Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling may be necessary to define appropriate site-specific risk management measures. Required removal efficiency for wastewater can be achieved using onsite/offsite technologies, either alone or in combination. If scaling reveals a condition of unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.