

Safety Data Sheet according to UK REACH Regulations SI 2020/1577

Revision date: 9/30/2021 Supercedes: 4/22/2021

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

1.1. Product identifier:		
Product trade name: Company product number: UK REACH registration number: Substance name: Substance identification number: Other means of identification:	Kalama* Cyprinal CYPRINAL UK-01-2280418955-7-0001 (2E)-2-Methyl-3-phenylacrylaldehyde EC 701-219-0 32143; Cinnamaldehyde, alpha-methyl-; 2-Propenal, 2-methyl-3-phenyl-; alpha- Methylcinnamic aldehyde; α-Methylcinnamaldehyde	
1.2. Relevant identified uses of the substance or	mixture and uses advised against:	
Uses: Uses advised against:	Fragrance ingredient. Intermediate. Industrial applications. Professional applications. Consumer uses e.g. as a carrier in cosmetics/personal care products, perfumes and fragrances. See Annex for covered uses. None identified	
1.3. Details of the supplier of the safety data she	et:	
Manufacturer/Supplier:	Emerald Kalama Chemical Limited Dans Road Widnes, Cheshire WA8 0RF United Kingdom Telephone: +44 (0) 151 423 8000	
For further information about this SDS:	Email: product.compliance@emeraldmaterials.com	
1.4. Emergency telephone number:		
	ChemTel (24 hours): 1-800-255-3924 (USA); +1-813-248-0585 (outside USA).	
SECTION 2: Hazards identification		

2.1. Classification of the substance or mixture:

Product classification according to GB CLP as amended:

Skin Sensitizer, category 1, H317

See Section 2.2 for full text of H (Hazard) statements.

2.2. Label elements:

Product labeling according to GB CLP as amended:

Hazard pictogram(s):



Signal word: Warning Hazard statements: H317 May cause an allergic skin reaction. Precautionary statements: P261 Avoid breathing dust/fume/gas/mist/vapours/spray. P280 Wear protective gloves. P302+P352 IF ON SKIN: Wash with plenty of soap and water. P333+P313 If skin irritation or rash occurs: Get medical advice/attention. P362+P364 Take off contaminated clothing and wash it before reuse.

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 GB CLP 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>	Classification	H Statements
0000101-39-3	2-Methyl-3-phenylacrylaldehyde (α- Methylcinnamaldehyde)	99-100	Skin Sens. 1	H317
CAS-No.	Chemical Name	Weight%	UK REACH Registration No.	EC/List Number
0000101-39-3	2-Methyl-3-phenylacrylaldehyde (α- Methylcinnamaldehyde)	99-100	UK-01-2280418955-7-0001	701-219-0 (202-938-8)

See Section 16 for full text of H (Hazard) statements.

Notes: 2-METHYL-3-PHENYLACRYLALDEHYDE: Alternative CAS# 15174-47-7 (EC 701-219-0, (2E)-2-Methyl-3-phenylacrylaldehyde).

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: Immediately flush eyes with plenty of clean water for an extended time, not less than fifteen (15) minutes. Flush longer if there is any indication of residual chemical in the eye. Ensure adequate flushing of the eyes by separating the eyelids with fingers and roll eyes in a circular motion. If eye irritation persists: Get medical advice/attention.

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. Preexisting sensitization, skin and/or respiratory disorders or diseases may be aggravated. 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: None known.

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. Combustion hazard: waste soaked with this product may heat to temperatures causing self-ignition if improperly discarded. Many aldehydes readily oxidize exothermically when exposed to air. Any clean up materials, like rags, towels, etc. should be washed with water with mild soap or laundered with mild detergent before proper disposal to avoid the potential temperature rise from oxidation.

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. Combustion hazard: waste soaked with this product may heat to temperatures causing self-ignition if improperly discarded. Immediately after use, rags, steel wool or other waste should be wetted or cleaned with water with mild soap or laundered with mild detergent or placed into a water-filled metal container before proper disposal.

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. 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. Avoid drinking, tasting, swallowing or ingesting this product. 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. Shelf life: 24 months. 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.

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:

Occupational exposure limits (OEL):				
<u>Chemical Name</u> 2-Methyl-3-phenylacrylaldehyde (α- Methylcinnamaldehyde)	ACGIH - TWA/Ceiling N/E	<u>ACGIH - STEL</u> N/E		
<u>Chemical Name</u> 2-Methyl-3-phenylacrylaldehyde (α- Methylcinnamaldehyde)	UK WEL N/E			
N/E=Not established (no exposure limits established for	r the listed substances for listed country/region	n/organization).		
Derived No Effect Levels (DNELs):				
) Mathyd 2 nhanylaendaldehyda (g Mathydainnamaldehyda)				

<u>z-ivieuryi-j-prierryiaci ylaiuerryue</u>	- <u>Meuryi-S-phenyiaci yialdenyde (d-Meuryichnamaidenyde)</u>					
Population	Route	Acute (local)	Acute (systemic)	Long Term (local)	Long Term (systemic)	
Workers	Inhalation	N/E	N/E	13,3 mg/m3	13,3 mg/m3	
Workers	Dermal	3,5 mg/cm2	N/E	3,5 mg/cm2	2,21 mg/kg bw/day	
General population	Inhalation	N/E	N/E	3,27 mg/m3	3,27 mg/m3	
General population	Dermal	3,5 mg/cm2	N/E	3,5 mg/cm2	1,11 mg/kg bw/day	
General population	Oral	N/E	N/E	N/E	1,11 mg/kg bw/day	

Predicted No Effect Concentration (PNECs):

<u>2-Methyl-3-phenylacrylaldehyde (α-Methylcinnamaldehyde)</u>

Compartment	PNEC
Freshwater	0,0012 mg/L
Freshwater sediment	0,0404 mg/kg dw
Marine water	0,00012 mg/L
Marine water sediment	0,00404 mg/kg dw
Intermittent releases	0,012 mg/L
Soil	0,0071 mg/kg dw
STP	3,66 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 480 minutes (protection class 6) are recommended. For brief contact or splash applications, gloves with breakthrough times of 30 minutes or greater are recommended (protection class 2 or greater). The protective gloves to be used must comply with the specifications of the 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: Respiratory protection is not needed with proper ventilation. 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. Gas mask with filter Type A.

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:

Appearance:	Liquid. Clear yellow
Odour:	Almond-like
Odour threshold:	Not Available
pH:	Not Available
Melting point/Freezing point:	<1.8°C (<35°F) @ 101.3 kPa
Initial boiling point and boiling range °C:	254°C @ 101.3 kPa
Initial boiling point and boiling range °F:	489°F @ 101.3 kPa
Flash point:	120 °C (248 °F) Pensky-Marten Closed Cup
Evaporation rate:	Not Available
Flammability (solid, gas):	Not Applicable (liquid)
Upper/lower flammability or explosive limits:	LFL/LEL: Not Available
	UFL/UEL: Not Available
Vapour pressure:	<0.01 kPa (<0.1 mm Hg) @ 20°C
Vapour density:	Not Available
Relative density:	1.036-1.040 (20 °C)
Solubility in water:	Negligible
Partition coefficient (n-octanol/water):	2.471 @ 25°C
Autoignition temperature:	248°C (478°F)
Decomposition temperature:	Not Available
Viscosity:	4.156 mPa.s @ 20°C
Explosive properties:	Not explosive
Oxidising properties:	Not oxidizing
% Volatile By weight:	100%
VOC:	Not Available

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. Readily undergoes oxidation by air.

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 strong bases and 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 cause allergic skin reaction. Repeated or prolonged skin contact may cause irritation.

Inhalation: High airborne concentrations of vapors resulting from heating, misting or spraying may cause irritation of the respiratory tract and mucous membranes.

Ingestion: May be harmful if swallowed. Ingestion may cause irritation.

Acute toxicity information: Not classified (based on available data, the classification criteria are not met).

Chemical Name	Inhalation LC50	Species	Oral LD50	Species	Dermal LD50	Species
2-Methyl-3-phenylacrylaldehyde (α-	N/E	N/E	2050 mg/kg	Rat/ adult	>5000 mg/kg	Rabbit/ adult
Methylcinnamaldehyde)			0.0		0.0	

Skin corrosion/irritation: Not classified (based on available data, the classification criteria are not met).

Chemical Name	Skin irritation	Species
2-Methyl-3-phenylacrylaldehyde (α-	Non-irritant	Human
Methylcinnamaldehyde)		

Serious eye damage/irritation: Not classified (based on available data, the classification criteria are not met).

Chemical Name	Eye irritation	Specie
2-Methyl-3-phenylacrylaldehyde (α-	Slight irritant	Rabbit/
Methylcinnamaldehyde)	•	

Respiratory or skin sensitization: Skin sensitization - Category 1.

Chemical Name	Skin sensitisation	Species	
2-Methyl-3-phenylacrylaldehyde (α-	Sensitizer	Weight of	
Methylcinnamaldehyde)			

Carcinogenicity: Not classified (based on available data, the classification criteria are not met). READ-ACROSS (CINNAMALDEHYDE): In a 2-year animal feeding study, Cinnamaldehyde was not carcinogenic; NOAEL (carcinogenicity), rat: 400 mg/kg bw/day.

adult

evidence

Germ cell mutagenicity: Not classified (based on available data, the classification criteria are not met). 2-METHYL-3-PHENYLACRYLALDEHYDE: Ames tests, with and without activation: negative. Mutagenicity was negative in in-vivo genotoxicity assays.

Reproductive toxicity: Not classified (based on available data, the classification criteria are not met). 2-METHYL-3-PHENYLACRYLALDEHYDE - READ-ACROSS/WEIGHT OF EVIDENCE: Reproductive toxicity, oral study in rats: NOAEL (noobserved adverse-effect-level) of 200 mg/kg bw/day. Developmental toxicity, oral, rats: NOAEL of 1200 mg/kg bw/day. Specific target organ toxicity (STOT) - single exposure: Not classified (based on available data, the classification criteria are not met).

Specific target organ toxicity (STOT) - repeated exposure: Not classified (based on available data, the classification criteria are not met). 2-METHYL-3-PHENYLACRYLALDEHYDE: Repeated dose toxicity study: NOAEL (No-Observed-Adverse-Effect-Level), oral, rat (weight of evidence) - 110 mg/kg bw/day; NOAEL, dermal, rat (weight of evidence) - 110 mg/kg bw/day.

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
	2-Methyl-3-phenylacrylaldehyde (α-	Fish	LC50 1.2 mg/L (96 hours) (similar	N/E	N/E
	2-Methylcinnamaidenyde) 2-Methyl-3-phenylacrylaldehyde (α- Methylcinnamaldehyde)	Invertebrates	EC50 9.9 mg/L (48 hours)	N/E	N/E
	2-Methyl-3-phenylacrylaldehyde (α-	Algae	EC50 14.8 mg/L (72 hours)	N/E	EC10 6.1 mg/L(72 hours)
	2-Methyl-3-phenylacrylaldehyde (α- Methylcinnamaldehyde)	Micro-organisms	EC50 366 mg/L (3 hours)		
12.2.	Persistence and degradability	y:			
	<u>Chemical Name</u> 2-Methyl-3-phenylacrylaldehyde (α- Methylcinnamaldehyde)	<u>Biode</u> Readi	gradation ly biodegradable (OECD 301B)		
12.3.	Bioaccumulative potential:				
	<u>Chemical Name</u> 2-Methyl-3-phenylacrylaldehyde (α- Methylcinnamaldehyde)	<u>Bioco</u> N/E	ncentration Factor (BCF)		Log Kow 2.471 @ 25°C
12.4.	Mobility in soil:				
	<u>Chemical Name</u> 2-Methyl-3-phenylacrylaldehyde (α- Methylcinnamaldehyde)	<u>Mobil</u> N/E	ity in soil (Koc/Kow)		
12.5.	Results of PBT and vPvB ass	sessment:			

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: N/A

14.2. UN proper shipping name:

Not regulated - See Bill of Lading for Details

14.3. Transport hazard class(es):

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

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

14.4. Packing group: N/A

14.5. Environmental hazards:

Marine pollutant: Not Applicable 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

SECTION 15: Regulatory information

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

STATUTORY INSTRUMENTS 2020 No. 1577, The REACH etc. (Amendment etc.) (EU Exit) Regulations 2020 [UK REACH]: Applicable components have been registered, are exempt or otherwise compliant. For UK REACH, CAS# 15174-47-7 (EC 701-219-0). UK REACH is only relevant to substances either manufactured or imported into the UK. Emerald Kalama Chemical has met its obligations under the UK REACH regulation. UK REACH information regarding this product is provided for informational purposes only. Each Legal Entity may have differing UK REACH obligations, depending on their place in the supply chain. Emerald's compliance with UK REACH does not imply automatic coverage for Downstream Users located in the UK. For material manufactured outside of the UK, the importer of record must understand and meet their specific obligations under the regulation.

UK Authorizations and/or restrictions on use: Not Applicable

Other UK information: No Additional Information

Chemical inventories:

Regulation	Status
Australian Inventory of Industrial Chemicals (AIIC):	Y
Canadian Domestic Substances List (DSL):	Y
Canadian Non-Domestic Substances List (NDSL):	N
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 1970 Patient to discharge Hills handland handland and an and an and the second statements and and the second	A TANK A WATER PLANT AND A START AND A START

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.

Europe REACH (EC) 1907/2006: Applicable components are registered, exempt or otherwise compliant. For Europe REACH, CAS# 15174-47-7 (EC 701-219-0). EU REACH is only relevant to substances either manufactured or imported into the EU. Emerald Kalama Chemical has met its obligations under the EU REACH regulation. EU REACH information regarding this product is provided for informational purposes only. Each Legal Entity may have differing EU 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.

15.2. Chemical safety assessment:

A chemical safety assessment has been carried out for the substance or mixture consistent with the EU REACH regulation.

SECTION 16: Other information

```
Hazard (H) Statements in the Composition section (Section 3):H317May cause an allergic skin reaction.
```

Reason for revision: Changes in Section(s): 15

Evaulation method For classification Of mixtures: Not Applicable (substance)

Legend:

*: Trademark owned by Emerald Kalama Chemical, LLC.
 ACGIH: American Conference of Governmental Industrial Hygienists
 ATE: Acute toxicity estimate
 N/A: Not Applicable
 N/E: None Established

STEL: Short Term Exposure Limit TWA: Time Weighted Average (exposure for 8-hour workday) UK WEL: United Kingdom Workplace Exposure Limits

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 Kalama Chemical, LLC 1499 SE Tech Center Place, Suite 300 Vancouver, WA 98683 United States

Annex

Exposure Scenarios

Substance information:

Name of substance: (2E)-2-Methyl-3-phenylacrylaldehyde EC# 701-219-0 / CAS# 15174-47-7 UK REACH Registration number: UK-01-2280418955-7-0001 EU REACH Registration number: 01-2119538797-21-0000

List of exposure scenarios:

ES1: Use at industrial sites - Use as an intermediate

ES2: Formulation - Formulation of fragrance compounds

ES3: Formulation - Formulation of fragranced end-products

ES4: Use at industrial sites - Industrial end-use of washing and cleaning products

ES5: Use by professional workers - Professional end-use of washing and cleaning products

ES6: Consumer use - Consumer end-use of washing and cleaning products (Indoors)

ES7: Consumer use - Consumer end-use of washing and cleaning products (Outdoors)

ES8: Use by professional workers - Professional use of polishes and wax blends

ES9: Consumer use - Consumer end-use of polishes and wax blends

ES10: Consumer use - Consumer end-use of air care products

ES11: Consumer use - Consumer end-use of biocides (Indoors)

ES12: Consumer use - Consumer end-use of biocides (Outdoors)

ES13: Use by professional workers - Professional end-use of cosmetics

ES14: Consumer use - Consumer end-use of cosmetics

General remarks:

The first tier environmental exposure assessments have at first instance been performed using EUSES 2.1 which is part of Chemical Safety Assessment and Reporting tool version 2.2 (CHESAR v2.2). Higher tier assessments have been performed if safe use was not demonstrated using first tier assessments. In these cases Specific Environmental Release Categories (SpERCs) have been used.

The first tier worker exposure assessments have at first instance been performed using Worker TRA v3 which is part of Chemical Safety Assessment and Reporting tool version 2.2 (CHESAR v2.2).

The ECETOC TRA tool has been used to estimate consumer exposures unless otherwise indicated.

Reference: IFRA REACH Exposure scenarios for Fragrance Substances. Version 2.1/11 December 2012.

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

Short title of the exposure scenario:
Use at industrial sites - Use as an intermediate
List of use descriptors:
Sector of use category (SU): SU8
Product category (PC): PC19
Process category (PROC): PROC1, PROC2, PROC3, PROC8b
Environmental release category (ERC): ERC6a (SpERC IFRA 2.1a.v1)
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.
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities. Transfer includes loading, filling, dumping, bagging.

Name of contributing environmental scenario and corresponding ERCs: ERC6a Use of intermediate.

Further explanations:

Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

Industrial application.

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). For further information on CEFIC (The European Chemical Industry Council) Specific Environmental Release Categories (SpERCs), see http://www.cefic.org/Industry-support/Implementing-reach/Libraries/.

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.

Product characteristics:

Concentration of substance: Up to 100%.

Physical state: liquid.

Frequency and duration of use/exposure:

Duration:

- PROC1, PROC2, PROC3: <=8 hours/day.

- PROC8b: <=4 hours/day.

Human factors not influenced by risk management:

Exposed skin surface:

- PROC1, PROC3: 240 cm2 (one hand, face side only).
- PROC2: 480 cm2 (two hands, face side only).
- PROC8b: 960 cm2 (two hands).

Other given operational conditions affecting workers exposure:

Location: Indoor use.

Domain: Industrial use.

Process temperature (for liquid): <= 40 °C.

Technical conditions and measures to control dispersion from source towards the worker:

General ventilation: Enhanced general ventilation (5-10 air changes per hour): 70%.

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.
- PROC8b: Semi-closed process with occasional controlled exposure.

Local exhaust ventilation: Not required.

Occupational Health and Safety Management System: Advanced.

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 specific activity training) (Effectiveness Dermal: 95%).

Additional good practice advice:

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.

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: <0.5 kPa.

Amounts used:

Maximum daily use at a site: 24 ton/day.

Maximum annual use at a site: 7200 tons/year.

Percentage of tonnage used at regional scale: 100 %.

Frequency and duration of use:

Emission days: 300 days/year.

Environmental factors not influenced by risk management:

Flow rate of receiving surface water: >=18,000 m3/day (default).

Other given operational conditions affecting environmental exposure:

Industrial use.

Release fraction to air from process (initial release): 0.00025; (final release): 0.00025. Local release rate: 6 kg/day (SpERC IFRA 2.1a.v1). Release fraction to wastewater from process (initial release): 0.00002; (final release): 0.000006. Local release rate: 0.144 kg/day (SpERC IFRA 2.1a.v1)

Release fraction to soil from process (final release): 0.0 (SpERC IFRA 2.1a.v1).

On-site treatment of wastewater: Physico-chemical treatment (Effectiveness Water: 70%)

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Dry sludge application to agricultural soil: Yes (default). Conditions and measures related to municipal sewage treatment plant: Municipal Sewage Treatment Plant (STP): Yes (Efficiency=87.61%). Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town). Conditions and measures related to external treatment of waste for disposal: External treatment and disposal of waste should comply with applicable local and/or national regulations. 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.) 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: Spills are cleaned immediately. All risk management measures utilised must also comply with all relevant local regulations 3. Exposure estimation and reference to its source Assessment method-Health: CHESAR V2.2 Worker TRA v3. Only highest figures are presented here. Assessment method-Environment: CHESAR V2.2 - EUSES v2.1. Health Effect/Compartment Exposure estimate/PEC RCR Notes Worker, long-term, systemic, Dermal 0.686 mg/kg bw/day 0.31 PROC8b PROC3, PROC8b

Worker, long-term, systemic, Inhalation 5.482 mg/m3 0.412 0.722 Worker, long-term, systemic, Combined routes N/A PROC8b Worker, long-term, local, Dermal 0.05 mg/cm2 0.014 PROC8b 5.482 mg/m3 0.412 PROC3, PROC8b Worker, long-term, local, Inhalation

Environment				
Effect/Compartment	Exposure estimate/PEC	<u>RCR</u>	<u>Notes</u>	
Freshwater	0.0009719 mg/L	0.81		
Freshwater sediment	0.023 mg/kg dw	0.572		
Marine water	0.00009676 mg/L	0.806		
Marine water sediment	0.002 mg/kg dw	0.57		
Soil	0.004 mg/kg dw	0.598		
STP	0.009 mg/L	<0.01		
Human via environment, Inhalation	0.001 mg/m3	<0.01		
Human via environment, Oral	0.0005801 mg/kg bw/day	<0.01		
Human via environment, Combined routes	N/A	<0.01		

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. Duration: PROC1, PROC2, PROC3: <=8 hours/day. PROC8b: <=4 hours/day. Dermal protection:Yes (chemically resistant gloves conforming to EN374 with specific activity training) (Effectiveness Dermal: 95%). 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 - Formulation of fragrance compounds

1. Exposure scenario (2)

Short title of the exposure scenario:

Formulation - Formulation of fragrance compounds

List of use descriptors:

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

Environmental release category (ERC): ERC2 (SpERC IFRA 2.1a.v1)

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. 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.

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:

Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

Industrial application.

Generic exposure scenario: IFRA GES 1 (IU1).

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). For further information on CEFIC (The European Chemical Industry Council) Specific Environmental Release Categories (SpERCs), see http://www.cefic.org/Industry-support/Implementing-reach/Libraries/.

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.

Product characteristics:

Concentration of substance:

- PROC1, PROC3, PROC5, PROC8b, PROC15: >25%.
- PROC8a, PROC9: 5-25%.

Physical state: liquid.

Frequency and duration of use/exposure:

- Duration:
- PROC3, PROC5, PROC8a: <4 hours/day.
- PROC1, PROC8b, PROC9: <1 hour/day.

- PROC15: <15 minutes.

Human factors not influenced by risk management:

Exposed skin surface:

- PROC1, PROC3, PROC15: 240 cm2 (one hand, face side only).
- 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.

Technical conditions and measures to control dispersion from source towards the worker:

General ventilation:

- PROC15: Good general ventilation (3-5 air changes per hour): 30%.
- PROC1, PROC3, PROC5, PROC8a, PROC8b, PROC9: Enhanced general ventilation (5-10 air changes per hour): 70%.
- Containment:
- PROC1: Closed system (minimal contact during routine operations).
- PROC3: Closed batch process with occasional controlled exposure.
- PROC8b, PROC9: Semi-closed process with occasional controlled exposure.
- PROC5, PROC8a, PROC15: No.
- Local exhaust ventilation: Not required.

Occupational Health and Safety Management System: Advanced.

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

Respiratory protection: Not required.

Dermal protection:

- PROC1, PROC3, PROC5, PROC8a, PROC8b, PROC9: Yes (chemically resistant gloves conforming to EN374 with specific activity training) (Effectiveness Dermal: 95%).

- PROC15: Yes (chemically resistant gloves conforming to EN374) (Effectiveness Dermal: 80%).

Additional good practice advice:

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.

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: <0.5 kPa.

Amounts used:

Maximum daily use at a site: 2 ton/day. Maximum annual use at a site: 300 tons/year. Percentage of tonnage used at regional scale: 100 %.

Frequency and duration of use:

Emission days: 180 days/year.

Environmental factors not influenced by risk management:

Flow rate of receiving surface water: >=18,000 m3/day (default).

Other given operational conditions affecting environmental exposure:

Industrial use.

Release fraction to air from process (initial release): 0.00025; (final release): 0.00025. Local release rate: 0.5 kg/day (SpERC IFRA 2.1a.v1). Release fraction to wastewater from process (initial release): 0.00002; (final release): 0.000006. Local release rate: 0.012 kg/day (SpERC IFRA 2.1a.v1) 2.1a.v1)

Release fraction to soil from process (final release): 0.0 (SpERC IFRA 2.1a.v1).

On-site treatment of wastewater: Physico-chemical treatment (Effectiveness Water: 70%).

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil:

Dry sludge application to agricultural soil: Yes (default).

Conditions and measures related to municipal sewage treatment plant:

Municipal Sewage Treatment Plant (STP): Yes (Efficiency=87.61%). Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town).

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

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.)

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:

Spills are cleaned immediately.

All risk management measures utilised must also comply with all relevant local regulations.

3. Exposure estimation and reference to its source

Assessment method-Health: CHESAR V2.2 Worker TRA v3. Only highest figures are presented here.

Assessment method-Environment: CHESAR V2.2 - EUSES v2.1.

Health

Effect/Compartment	Exposure estimate/PEC	<u>RCR</u>	Notes
Worker, long-term, systemic, Dermal	0.686 mg/kg bw/day	0.31	PROC5, PROC8b
Worker, long-term, systemic, Inhalation	6.578 mg/m3	0.495	PROC8a
Worker, long-term, systemic, Combined routes	N/A	0.722	
Worker, long-term, local, Dermal	0.1 mg/cm2	0.029	PROC5
Worker, long-term, local, Inhalation	6.578 mg/m3	0.495	PROC8a
Environment			
Effect/Compartment	Exposure estimate/PEC	<u>RCR</u>	<u>Notes</u>
Freshwater	0.0001547 mg/L	0.129	
Freshwater sediment	0.004 mg/kg dw	0.091	
Marine water	0.00001504 mg/L	0.125	
Marine water sediment	0.0003576 mg/kg dw	0.089	
Soil	0.0003591 mg/kg dw	0.051	
STP	0.0007432 mg/L	<0.01	
Human via environment, Inhalation	.00005921 mg/m3	<0.01	
Human via environment, Oral	0.00003069 mg/kg bw/day	<0.01	
Human via environment, Combined routes	N/A	<0.01	

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/Ope	rational
Conditions outlined in Section 2 are implemented. Where other Risk Management Measures/Operational C are adopted, then users should ensure that risks are managed to at least equivalent levels. Duration: PRC PROC5, PROC8a: <4 hours/day. PROC1, PROC8b, PROC9: <1 hour/day. PROC15: <15 minutes. Derma PROC1, PROC3, PROC5, PROC8a, PROC8b, PROC9: Yes (chemically resistant gloves conforming to E specific activity training) (Effectiveness Dermal: 95%). PROC15: Yes (chemically resistant gloves conform EN374) (Effectiveness Dermal: 80%). Concentration of substance: Up to 25%.	onditions C3, I protection: J374 with ng to
Environment: Guidance is based on assumed operating conditions which may not be applicable to all sites; thus, scaling necessary to define appropriate site-specific risk management measures. Required removal efficiency for can be achieved using onsite/offsite technologies, either alone or in combination. If scaling reveals a conditionate unsafe use (i.e., RCRs > 1), additional RMMs or a site-specific chemical safety assessment is required.	may be vastewater ion of
Exposure scenario (3): Formulation - Formulation of fragranced end-products	

1. Exposure scenario (3)

Short title of the exposure scenario:

Formulation - Formulation of fragranced end-products

List of use descriptors:

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

Environmental release category (ERC): ERC2 (SpERC AISE 2.1g.v2).

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. 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 in laboratories (less than or equal to 1 l or 1 kg present at workplace) Name of contributing environmental scenario and corresponding ERCs:

ERC2 Formulation into mixture.

Further explanations:

Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

Industrial application.

Generic exposure scenario: IFRA GES 2 (IU2).

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). For further information on CEFIC (The European Chemical Industry Council) Specific Environmental Release Categories (SpERCs), see http://www.cefic.org/Industry-support/Implementing-reach/Libraries/.

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.

Product characteristics:

Concentration of substance:

- PROC1, PROC3, PROC5, PROC8b, PROC15: 5-25%.
- PROC8a, PROC9, PROC14: <1%.
- Physical state: liquid.

Frequency and duration of use/exposure:

Duration:

- PROC14: <=8 hours/day.
- PROC3, PROC5, PROC8a: <=4 hours/day.
- PROC1, PROC8b, PROC9: <=1 hour/day.

- PROC15: <=15 minutes

Human factors not influenced by risk management:

Exposed skin surface:

- PROC1, PROC3, PROC15: 240 cm2 (one hand, face side only).
- PROC5, PROC9, PROC14: 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.

Technical conditions and measures to control dispersion from source towards the worker:

General ventilation:

- PROC15: Good general ventilation (3-5 air changes per hour): 30%.

- PROC1, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC14: Enhanced general ventilation (5-10 air changes per hour): 70%.

- Containment:
- PROC1: Closed system (minimal contact during routine operations).
- PROC3: Closed batch process with occasional controlled exposure.
- PROC8b, PROC9: Semi-closed process with occasional controlled exposure.
- PROC5, PROC8a, PROC14, PROC15: No.
- Local exhaust ventilation: Not required.

Occupational Health and Safety Management System: Advanced.

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

Respiratory protection: Not required.

Dermal protection:

- PROC5: Yes (chemically resistant gloves conforming to EN374 with basic employee training) (Effectiveness Dermal: 90%).

⁻ PROC1, PROC3, PROC8a, PROC9, PROC14, PROC15: No (Effectiveness Dermal: 0%).

- PROC8b: Yes (chemically resistant gloves conforming to EN374) (Effectiveness Dermal: 80%)	
Additional good practice advice:	

Additional good practice advice:	no are maintained				
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 ot	ojects.				
Regular cleaning of equipment and work area.					
I raining staff on good practice.	As in place are being used corre	ectly and OCs fo	llowed		
2 2 Control of environmental exposure	is in place are being used cone		niowed.	—	
General:				—	
All risk management measures utilised must also co	mply with all relevant local regu	ulations.			
Product characteristics:				_	
Physical state: liquid.					
Vapour pressure: <0.5 kPa.				_	
Maximum daily use at a site: 1.5 ton/day.					
Maximum annual use at a site: 15 tons/year.					
Percentage of tonnage used at regional scale: 10 %.					
Frequency and duration of use:					
Emission days: <=220 days/year.					
Elow rate of receiving surface water: >=18 000 m3/d	gement. av (default)				
Other given operational conditions affecting enviro	nmental exposure:			—	
Indoor use.	·····				
Industrial use.					
Release fraction to air from process (initial release):	0.0; (final release): 0.0. Local release): 0.001; (final release)	elease rate: 0 kg	/day (SpERC AISE 2.1g.v2).		
2.1a.v2)	release). 0.0001, (illiai release)	. 0.0001. LOCALI	elease fale. 0. 15 kg/day (SpERC AISE		
Release fraction to soil from process (final release):	0.0 (SpERC AISE 2.1g.v2).				
Technical onsite conditions and measures to reduc	e or limit discharges, air emis	sions and releas	ses to soil:	_	
Dry sludge application to agricultural soil: Yes (defau	ult).				
Process efficiency: Process optimized for highly effic	cient use of raw materials (very	minimal environ	imental release).		
Conditions and measures related to municipal sew	age treatment plant:			—	
Municipal Sewage Treatment Plant (STP): Yes (Effi	ciency=87.61%).				
Size of municipal sewage system/treatment plant: >=	=2000 m3/day (standard town).				
Conditions and measures related to external treatn	nent of waste for disposal:				
External treatment and disposal of waste should con	nply with applicable local and/o	r national regula	tions. demonstrating control of risk with default		
conditions. Low risk assumed for waste life stage. W	aste disposal according to natio	onal/local legisla	ation is sufficient.)		
Conditions and measures related to external recov	ery of waste:			—	
External recovery and recycling of waste should con	nply with applicable local and/or	r national regula	tions.		
Additional good practice advice:					
Spills are cleaned immediately.	mply with all relevant local rog	lations			
All fisk management measures utilised must also co	inply with all relevant local regu			=	
3. Exposure estimation and reference to its source					
Assessment method-Environment: CHESAR V2.2 -	EUSES V2.1.				
	Exposure estimate/PEC	PCP	Notes	—	
Worker long term systemia Dermal	1.645 mg/kg bw/dov	0.744	<u>RBOC9</u>		
Worker, long term, systemic, Denhal	2.220 mg/m2	0.744	PROCE	—	
	3.289 Hig/III3	0.247	PROC3	—	
Worker, long-term, systemic, Combined routes	N/A	0.827			
Worker, long-term, local, Dermal	0.12 mg/cm2	0.034	PROC3, PROC5, PROC8b	—	
Worker, long-term, local, Inhalation	3.289 mg/m3	0.247	PROC5		
		DOD	N-4		
	Exposure estimate/PEC	RCR	NOTES		
Freshwater 0.001 mg/L 0.841					
Freshwater sediment 0.024 mg/kg dw 0.594					
Invigring water U.UUU1005 mg/L U.837					
Marine water sediment	0.002 mg/kg dw	0.591			
Soil	0.004 mg/kg dw	0.584			
STP					
	0.009 mg/L	<0.01		_	
Human via environment, Inhalation	0.009 mg/L 0.000002091 mg/m3	<0.01 <0.01		_	
Human via environment, Inhalation Human via environment, Oral	0.009 mg/L 0.000002091 mg/m3 0.00002135 mg/kg bw/day	<0.01 <0.01 <0.01			

Effect/Compartment	Exposure estimate/PEC	<u>RCR</u>	<u>Notes</u>	
RCR=Risk characterizati	on ratio (PEC/PNEC or Exposure estimate/DNEL); PEC=P	redicted en	vironmental concentration	
4. Guidance to the Down	stream User to evaluate whether he works inside the bou	Indaries set	bv the ES	
Health:	Predicted exposures are not expected to exceed the DN(Conditions outlined in Section 2 are implemented. Where are adopted, then users should ensure that risks are man hours/day. PROC3, PROC5, PROC8a: <=4 hours/day. P minutes. Dermal protection: PROC1, PROC3, PROC8a, Yes (chemically resistant gloves conforming to Substance: PROC1 PROC3, PROC5, PROC8b, PROC8b, Substance: PROC1 PROC3, PROC5, PROC8b, PROC1	M)EL when other Risk laged to at le ROC1, PRC PROC9, PF th basic em EN374) (Ef 5: 5-25% P	the Risk Management Me Management Measures/O east equivalent levels. Du DC8b, PROC9: <=1 hour/d ROC14: No (Effectiveness ployee training) (Effective fectiveness Dermal: 80%) ROC8a_PROC9_PROC1	asures/Operational perational Conditions iration: PROC14: <=8 lay. PROC15: <=15 Dermal: 0%). PROC5: ness Dermal: 90%). b. Concentration of 4. <1%
Environment:	Guidance is based on assumed operating conditions whi	ch may not l	be applicable to all sites: the	hus, scaling may be
	necessary to define appropriate site-specific risk manage can be achieved using onsite/offsite technologies, either unsafe use (i.e., RCRs > 1), additional RMMs or a site-sp	ment measi alone or in c ecific chem	ures. Required removal ef combination. If scaling reve ical safety assessment is	ficiency for wastewater eals a condition of required.
Exposure scenario (4):	Use at industrial sites - Industrial end-use of washin	g and clea	ning products	
Chart title of the exposure				
Use at industrial sites - In	dustrial end-use of washing and cleaning products			
List of use descriptors:				
Sector of use category (S	SU): SU0			
Product category (PC): P	'C35			
Process category (PROC	ک): PROC1, PROC2, PROC4, PROC7, PROC8b, PROC10	, PROC13		
Environmental release ca	ategory (ERC): ERC4			
PROC1 Chemical produce PROC2 Chemical produce	Iting worker scenarios and corresponding PROCS: stion or refinery in closed process without likelihood of expo ction or refinery in closed continuous process with occasior	osure or provinal controlle	cesses with equivalent co d exposure or processes v	ntainment conditions. with equivalent
containment conditions.				
PROC4 Chemical produc	tion where opportunity for exposure arises.	vization) by	a a processized air hydro	ulia progouro or
centrifugation applicable	for liquids and nowders	ization) by e	s.g. pressunzed all, riyura	und pressure of
PROC8b Transfer of sub	stance or mixture (charging and discharging) at dedicated	facilities. Tra	ansfer includes loading, fil	lina, dumpina, baggina,
PROC10 Roller application	on or brushing. This includes application of paints, coating	s, removers,	adhesives or cleaning ag	ents to surfaces with
potential exposure arising	g from splashes.			
PROC13 Treatment of ar	ticles by dipping and pouring.			
Name of contributing env	vironmental scenario and corresponding ERCs:			
ERC4 Use of non-reactiv	e processing aid at industrial site (no inclusion into or onto	article).		
Further explanations: Formulation, packing and mixing, tabletting, compre-	I re-packing of the substance and its mixtures in batch or construction, pelletisation, extrusion, large and small scale packi	ontinuous oj ng, samplin	perations, including storag g, maintenance and assoc	je, materials transfers, siated laboratory
Industrial application.				
Generic exposure scenar	rio: IFRA GES 3 (IU3).			
For further information on	standardized use descriptors see the European Chemical	Agency (EC	CHA) Guidance on information	ation requirements and
chemical safety assessm	ient, Chapter R.12: Use descriptor system (http://guidance.	echa.europ	a.eu/docs/guidance_docu	ment/
	s_r12_en.pdf).			
2. Conditions of use affect	cting exposure			
2.1 Control of workers ex	cposure			
General: Generally accepted stand cleaned immediately.	dards of occupational hygiene are maintained. Smoking, ea	ating and dri	nking are prohibited at the	workplace. Spills are
Product characteristics:				
Concentration of substan	ice: Up to 1%.			
Physical state: liquid.				
Frequency and duration	of use/exposure:			
Duration:				
- PROCISE - A hours/day	שא, דהטטו, דגטטסט, דגטטוט: <=o nours/day.			
Human factore not influe	y. anced by risk management:			
Exposed skin surface	nced by lisk management.			
- PROC1: 240 cm2 (one l	hand, face side only).			
- PROC2, PROC4, PROC	C13: 480 cm2 (two hands, face side only).			
- PROC8b, PROC10: 960	0 cm2 (two hands).			
- PROC7: 1500 cm2 (two	hands and upper wrists).			
Other given operational	conditions affecting workers exposure:			
Location:				
- PROC1, PROC2, PROC	J/, PROC13: Indoor use.			
- PROC4, PROC8D, PRC	JU IU: UUIDOOF USE.			
Process temperature (for	: liquid): <= 40 °C			
i roccos temperature (101				

Technical conditions and measures to control disp General ventilation: Basic general ventilation (1-3 a Containment:	persion from source towards the ir changes per hour): 0%.	e worker:			
 PROC1: Closed system (minimal contact during ro - PROC2: Closed continuous process with occasion - PROC4, PROC8b; Semi-closed process with occasion - PROC4b; PROC8b; Semi-closed process with occasion - PROC4b; PROC8b; Semi-closed process with occasion - PROC4b; PR	outine operations). nal controlled exposure. asional controlled exposure.				
- PROC7, PROC10, PROC13: No.					
 - PROC1, PROC2, PROC4, PROC8b, PROC13: No 	ot required.				
- PROC7: Yes (95% effectiveness).					
Conditions and measures related to personal prot	em: Advanced. ection, hydiene and health eval	luation:			
Respiratory protection: Not required.					
PROC1 PROC2 PROC4 PROC8b PROC13 No	o (Effectiveness Dermal: 0%)				
- PROC7, PROC10: Yes (chemically resistant glove	es conforming to EN374) (Effect	iveness Dermal:	80%).		
Additional good practice advice:	ane are maintained				
Minimisation of manual phases/work tasks.	ene are maintaineu.				
Minimisation of splashes and spills.	hiaata				
Regular cleaning of equipment and work area.	ojecis.				
Training staff on good practice.	Ma in alara and bains and a sur		llavia d		
2.2 Control of environmental exposure	ivis in place are being used corr	ectly and OCs to	bliowed.		
General:					
All risk management measures utilised must also co	omply with all relevant local regu	ulations.			
Physical state: liquid.					
Vapour pressure: <0.5 kPa.					
Amounts used: Maximum daily use at a site: 0 0000275 ton/day.					
Maximum annual use at a site: 0.5 tons/year.					
Percentage of tonnage used at regional scale: 10 %).				
Flow rate of receiving surface water: >=18.000 m3/	igement: dav (default).				
Other given operational conditions affecting enviro	onmental exposure:				
Industrial use. Indoor use					
Release fraction to air from process (initial release)	: 1.00; (final release): 1.00. Loca	al release rate: 0	.027 kg/day.		
Release fraction to wastewater from process (initial Release fraction to soil from process (final release)	release): 1.00; (final release): 1	.00. Local releas	se rate: 0.027 kg/day.		
Technical onsite conditions and measures to redu	ce or limit discharges, air emis	sions and releas	ses to soil:		
Dry sludge application to agricultural soil: Yes (defa	ult).				
Municipal Sewage Treatment Plant (STP): Yes (Eff	vage treatment plant: ficiencv=87.61%).				
Size of municipal sewage system/treatment plant: >	=2000 m3/day (standard town).				
Conditions and measures related to external treat	ment of waste for disposal:	r national roquia	tions		
Particular considerations on the waste treatment op	erations: No (low risk) (ERC ba	sed assessment	t demonstrating control of risk with default		
conditions. Low risk assumed for waste life stage.	Vaste disposal according to nati	onal/local legisla	ation is sufficient.)		
External recovery and recycling of waste should co	very of waste: mply with applicable local and/o	r national regula	tions.		
Additional good practice advice:					
Spills are cleaned immediately.	amply with all relevant local reg	ulations			
3 Exposure estimation and reference to its source					
Assessment method-Health: CHESAR V2.2 Worker	r TRA v3. Only highest figures a	re presented he	re.		
Assessment method-Environment: CHESAR V2.2 -	EUSES v2.1.	-			
	E		Neter		
Enectrompartment	Exposure estimate/PEC	<u>KCK</u> 0.62	NOTES		
Worker long-term systemic Inhalation	4 264 mg/m3	0.02	PROC10		
Worker, long-term, systemic, finialation	N/A	0.895	PROC13		
Worker, long-term, local, Dermal	0.2 mg/cm2	0.057	PROC13		
Worker, long-term, local, Inhalation	4.264 mg/m3	0.321	PROC10		

Environment

Effect/Compartment

<u>Notes</u>

RCR

Effect/Compartment	Exposure estimate/PEC	RCR	Notes		
Freshwater	0.0002506 mg/L	0.209			
Freshwater sediment	0.006 mg/kg dw	0.148			
Marine water	0.00002464 mg/L	0.205			
Marine water sediment	0.0005858 mg/kg dw	0.145			
Soil	0.0008481 mg/kg dw	0.12			
STP	0.002 mg/L	<0.01			
Human via environment, Inhalation	0.0003829 mg/m3	<0.01			
Human via environment, Oral	0.0007436 mg/kg bw/day	<0.01			
Human via environment, Combined routes	N/A	<0.01			
RCB=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

4. Guidance to the Do	whistream 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. Duration: PROC1,
	PROC2, PROC4, PROC7, PROC8b, PROC10: <=8 hours/day. PROC13: <=4 hours/day. Dermal protection: PROC1,
	PROC2, PROC4, PROC8b, PROC13: No (Effectiveness Dermal: 0%). PROC7, PROC10: Yes (chemically resistant
	gloves conforming to EN374) (Effectiveness Dermal: 80%). Local exhaust ventilation: PROC1, PROC2, PROC4,
	PROC8b, PROC13: Not required. PROC7: Yes (95% effectiveness).
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 by professional workers - Professional end-use of washing and cleaning products

1. Exposure scenario (5)

Short title of the exposure scenario:

Use by professional workers - Professional end-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

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).

Further explanations:

Formulation, packing and re-packing of the substance and its mixtures in batch or continuous operations, including storage, materials transfers, mixing, tabletting, compression, pelletisation, extrusion, large and small scale packing, sampling, maintenance and associated laboratory activities.

Professional application.

Generic exposure scenario: IFRA GES 4 (IU4).

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.

Product characteristics:

Concentration of substance: Up to 1%. Physical state: liquid.

Frequency and duration of use/exposure:

Duration:

- PROC1, PROC2, PROC4, PROC8b: <=8 hours/day.

- PROC8a, PROC10, PROC13: <=4 hours/day. - PROC11: <=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: Indoor use.

Domain: Professional use.

Process temperature (for liquid): <= 40 °C.

Technical conditions and measures to control dispersion from source towards the worker:

General ventilation:

- PROC1, PROC2, PROC4, PROC10, PROC11, PROC13: Basic general ventilation (1-3 air changes per hour): 0%.
- PROC8b: Good general ventilation (3-5 air changes per hour): 30%.
- PROC8a: Enhanced general ventilation (5-10 air changes per hour): 70%.
- 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.

Occupational Health and Safety Management System: Basic.

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

Respiratory protection:

- PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC10, PROC13: Not required.

- PROC11: Yes (Respirator with APF of 10) (Effectiveness Inhalation: 90%).
- Dermal protection:

- PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC13: No (Effectiveness Dermal: 0%).

- PROC10: Yes (chemically resistant gloves conforming to EN374) (Effectiveness Dermal: 80%).

- PROC11: Yes (chemically resistant gloves conforming to EN374 with basic employee training) (Effectiveness Dermal: 90%).

Additional good practice advice:

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.

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: <0.5 kPa.

Amounts used:

Daily wide dispersive use: 0.0000275 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: >=18,000 m3/day (default).

Other given operational conditions affecting environmental exposure:

Professional 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: 0.027 kg/day.

Release fraction to soil from process (final release): 0.0.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil:

Dry sludge application to agricultural soil: Yes (default).

Conditions and measures related to municipal sewage treatment plant:

Municipal Sewage Treatment Plant (STP): Yes (Efficiency=87.61%).

Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town).

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

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.)

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:

All risk management measures utilised must also comply with all relevant local regulations.

3. Exposure estimation and reference to its source

Assessment method-Health: CHESAR V2.2 Worker TRA v3. Only highest figures are presented here. Assessment method-Environment: CHESAR V2.2 - EUSES v2.1.

Health					
Effect/Compartment		Exposure estimate/PEC	<u>RCR</u>	Notes	
Worker, long-term, syster	mic, Dermal	1.371 mg/kg bw/day	0.62	PROC8a, PROC8b, PROC13	
Worker, long-term, syster	mic, Inhalation	9.137 mg/m3	0.687	PROC10	
Worker, long-term, syster	mic, Combined routes	N/A	0.943	PROC11	
Worker, long-term, local,	Dermal	0.2 mg/cm2	0.057	PROC13	
Worker, long-term, local,	Inhalation	9.137 mg/m3	0.687	PROC10	
Environment					
Effect/Compartment		Exposure estimate/PEC	<u>RCR</u>	Notes	
Freshwater		0.0002506 mg/L	0.209		
Freshwater sediment		0.006 mg/kg dw	0.148		
Marine water		0.00002464 mg/L	0.205		
Marine water sediment		0.0005858 mg/kg dw	0.145		
Soil		0.0007749 mg/kg dw	0.109		
STP		0.002 mg/L	<0.01		
Human via environment.	Inhalation	0.000002104 ma/m3	<0.01		
Human via environment.	Oral	0.00001971 mg/kg bw/day	<0.01		
Human via environment	Combined routes	N/A	< 0.01		
RCR=Risk characterizatio	on ratio (PEC/PNEC or Expo	osure estimate/DNEL); PEC=Pre	dicted environmen	tal concentration.	
4 Guidance to the Downs	tream User to evaluate wh	ether he works inside the bound	laries set by the F	S	
Health:	Predicted exposures are no	ot expected to exceed the DN(M)	El when the Risk	Management Measures/Operational	
Toulan	Conditions outlined in Sect	ion 2 are implemented. Where of	her Risk Manager	nent Measures/Operational Conditions	
	are adopted, then users sh	ould ensure that risks are manage	ed to at least equi	valent levels. Duration: PROC1,	
	PROC2, PROC4, PROC8t	o: <=8 hours/day. PROC8a, PRO	C10, PROC13: <=	4 hours/day. PROC11: <=1 hour/day.	
	Dermal protection: PROC	1, PROC2, PROC4, PROC8a, PF	ROC8b, PROC13:	No (Effectiveness Dermal: 0%).	
	PROC10: Yes (chemically	resistant gloves conforming to El	N374) (Effectivene	ess Dermal: 80%). PROC11: Yes	
	(chemically resistant glove	s conforming to EN374 with basic	c employee trainin	g) (Effectiveness Dermal: 90%).	
	Respiratory protection: PR	UCI, PRUC2, PRUC4, PRUC88 of 10) (Effectiveness Inhalation: 9	1, PROC8D, PROC	, 10, PROC 13: Not required. PROC 11:	
Environment:	Guidance is based on ass	umed operating conditions which	may not be applic	able to all sites: thus, scaling may be	
	necessary to define approp	priate site-specific risk manageme	ent measures. Red	quired removal efficiency for wastewater	
	can be achieved using ons	ite/offsite technologies, either alc	one or in combinati	on. If scaling reveals a condition of	
	unsafe use (i.e., RCRs > 1)), additional RMMs or a site-spec	ific chemical safet	y assessment is required.	
Exposure scenario (6): C	Consumer use - Consum	er end-use of washing and cl	eaning products	(Indoors)	
1. Exposure scenario (6)					
Short title of the exposure	Scenario: or ond uso of woshing and c	looping products (Indoors)			
List of use descriptors:	i enu-use of washing and c				
Product category (PC): PC	235				
Environmental release cat	tegory (ERC): ERC8a				
Name of contributing env	ironmental scenario and co	prresponding ERCs:			
ERC8a Widespread use o	of non-reactive processing a	id (no inclusion into or onto article	e, indoor).		
Consumer uses e.g. as a	carrier in cosmetics/person	al care products, perfumes and fr	agrances Note: F	or cosmetic and personal care products	
consumer uses e.g. as a carrier in cosmetics/personal care products, perturnes and magnatices. Note: To cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation					
Consumer application.					
Generic exposure scenario: IFRA GES 6 (IU6).					
For further information on standardized use descriptors see the European Chemical Agency (ECHA) Guidance on information requirements and					
chemical satety assessment, Chapter R.12: Use descriptor system (http://guidance.echa.europa.eu/docs/guidance_document/					
Conditions of use offer	_i i 2_en.pui).]	
21 Control of consumer exposure					
General:					
For cosmetic and persona	I care products, risk assess	ment only required for the enviro	nment under REA	CH as human health is covered by	
alternative legislation.	- · · · ·			-	
Product characteristics:					

Concentration of substance in mixture: Up to 0.001 g/g. Physical state: liquid.

Amounts used:

Applied amounts for each use event: 50 g.

Frequency and duration of use/exposure: Duration covers exposure up to: 60 minutes/event.

Frequency - covers use frequency: up to 1 time/c	lay; 365 times/year.			
Human factors not influenced by risk manageme	nt:			
Exposed skin sunace: Hands. Dermal transfer factor=1				
2.2 Control of environmental exposure				
Product characteristics:				
Physical state: liquid.				
Vapour pressure: <0.5 kPa.				
Amounts used: Daily wide dispersive use: 0.00002475 tons/day				
Percentage of tonnage used at regional scale: 10	%.			
Frequency and duration of use:				
Wide dispersive use.				
Flow rate of receiving surface water: >=18 000 m ³	agement: 3/day (default)			
Other given operational conditions affecting envi	ronmental exposure:			
Indoor use.				
Release fraction to air from process (initial release	e): 1.00; (final release): 1.00.		r_{0} rate: 0.025 kg/day	
Release fraction to soil from process (final release	a): 0.0.		se rate. 0.020 kg/day.	
Technical onsite conditions and measures to red	luce or limit discharges, air emiss	ions and relea	ses to soil:	
Dry sludge application to agricultural soil: Yes (de	rauit).			
Municipal Sewage Treatment Plant (STP): Yes (E	Efficiency=87.61%).			
Size of municipal sewage system/treatment plant:	>=2000 m3/day (standard town).			
Conditions and measures related to external treat	atment of waste for disposal:			
External treatment and disposal of waste should c Particular considerations on the waste treatment of	omply with applicable local and/or operations: No (low risk) (EBC bas	ed assessment	tions. demonstrating control of risk with default	
conditions. Low risk assumed for waste life stage.	Waste disposal according to natio	nal/local legisla	ation is sufficient.)	
Conditions and measures related to external rec	overy of waste:		· · · · · · · · · · · · · · · · · · ·	
External recovery and recycling of waste should c	omply with applicable local and/or	national regula	tions.	
Additional good practice advice: All risk management measures utilised must also	comply with all relevant local requ	lations		
3 Exposure estimation and reference to its source				
Assessment method-Health: CHESAR V2.2 Cons	umer TRA V3.			
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2	umer TRA v3. 2 - EUSES v2.1.			
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health	umer TRA V3. - EUSES v2.1.			
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment	umer TRA v3. - EUSES v2.1. Exposure estimate/PEC	RCR	Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal	umer TRA v3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day	<u>RCR</u> 0.129	<u>Notes</u>	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Inhalation	umer TRA v3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3	RCR 0.129 0.048	<u>Notes</u>	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Inhalation Consumer, long-term, systemic, Oral	umer TRA v3. - EUSES v2.1. <u>Exposure estimate/PEC</u> 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day	RCR 0.129 0.048 <0.01	<u>Notes</u>	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route	umer TRA V3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A	RCR 0.129 0.048 <0.01 0.177	Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Inhalation Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation	umer TRA vs. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3	RCR 0.129 0.048 <0.01	Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Inhalation Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment	umer TRA v3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3	RCR 0.129 0.048 <0.01	Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Inhalation Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment	umer TRA v3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC	RCR 0.129 0.048 <0.01	<u>Notes</u>	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater	umer TRA v3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L	RCR 0.129 0.048 <0.01	Notes Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater sediment	umer TRA V3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.006 mg/kg dw	RCR 0.129 0.048 <0.01	Notes Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater Freshwater	Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.00002293 mg/L	RCR 0.129 0.048 <0.01	Notes Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water sediment	umer TRA v3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.0006 mg/kg dw 0.0005453 mg/kg dw 0.0005453 mg/kg dw	RCR 0.129 0.048 <0.01	Notes Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater Soil	umer TRA v3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.0006 mg/kg dw 0.00002293 mg/L 0.0005453 mg/kg dw 0.0006992 mg/kg dw	RCR 0.129 0.048 <0.01	Notes Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater Freshwater sediment Marine water sediment Soil STP	umer TRA V3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.0006 mg/kg dw 0.00002293 mg/L 0.0005453 mg/kg dw 0.0006992 mg/kg dw 0.002 mg/L 0.002 mg/L	RCR 0.129 0.048 <0.01	Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater Freshwater sediment Marine water Marine water sediment Soil STP Human via environment, Inhalation	umer TRA V3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.0006 mg/kg dw 0.00002293 mg/L 0.0005453 mg/kg dw 0.0006992 mg/kg dw 0.002 mg/L 0.00002102 mg/m3 0.00001820 mg/m3	RCR 0.129 0.048 <0.01	Notes Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Oral Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater Freshwater sediment Marine water Marine water Soil STP Human via environment, Inhalation Human via environment, Oral	umer TRA V3. EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.0005453 mg/kg dw 0.0006992 mg/kg dw 0.0002102 mg/m3 0.00001839 mg/kg bw/day	RCR 0.129 0.048 <0.01	Notes Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater Freshwater sediment Marine water sediment Soil STP Human via environment, Inhalation Human via environment, Oral Human via environment, Combined routes BCR=Bisk characterization ratio (PEC/PNEC or E	umer TRA v3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.0006 mg/kg dw 0.00002293 mg/L 0.0005453 mg/kg dw 0.0006992 mg/kg dw 0.0002 mg/L 0.00002102 mg/m3 0.00001839 mg/kg bw/day N/A Exposure estimate/DNEL): PEC-PE	RCR 0.129 0.048 <0.01	Notes Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater Freshwater sediment Marine water sediment Soil STP Human via environment, Inhalation Human via environment, Oral Human via environment, Oral Human via environment, Combined routes RCR=Risk characterization ratio (PEC/PNEC or E	umer TRA V3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.0006 mg/kg dw 0.00002293 mg/L 0.0006453 mg/kg dw 0.00002453 mg/kg dw 0.000092 mg/kg dw 0.00002102 mg/m3 0.00001839 mg/kg bw/day N/A Exposure estimate/DNEL); PEC=P	RCR 0.129 0.048 <0.01	Notes Notes Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Oral Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water sediment Soil STP Human via environment, Inhalation Human via environment, Oral Human via environment, Oral Human via environment, Combined routes RCR=Risk characterization ratio (PEC/PNEC or E 4. Guidance to the Downstream User to evaluate Health:	umer TRA V3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.0006 mg/kg dw 0.00002293 mg/L 0.0005453 mg/kg dw 0.0006992 mg/kg dw 0.0002102 mg/kg dw 0.0002102 mg/kg dw 0.00002102 mg/kg bw/day N/A Exposure estimate/DNEL); PEC=P whether he works inside the boul e not expected to exceed the DN(1)	RCR 0.129 0.048 <0.01	Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water Marine water sediment Soil STP Human via environment, Inhalation Human via environment, Oral Human via environment, Combined routes RCR=Risk characterization ratio (PEC/PNEC or E 4. Guidance to the Downstream User to evaluate Health: Predicted exposures ar Conditions outlined in S are adopted, then users	umer TRA V3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.0006 mg/kg dw 0.00002293 mg/L 0.0005453 mg/kg dw 0.00002102 mg/kg dw 0.00002102 mg/kg dw 0.00002102 mg/kg dw 0.00001839 mg/kg bw/day N/A Exposure estimate/DNEL); PEC=P whether he works inside the bou e not expected to exceed the DN((Section 2 are implemented. Where s should ensure that risks are man	RCR 0.129 0.048 <0.01	Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater Freshwater sediment Marine water Marine water sediment Soil STP Human via environment, Inhalation Human via environment, Oral Human via environment, Oral Human via environment, Oral Human via environment, Combined routes RCR=Risk characterization ratio (PEC/PNEC or E 4. Guidance to the Downstream User to evaluate Health: Predicted exposures ar Conditions outlined in S are adopted, then users Environment: Guidance is based on a	Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.0005453 mg/kg dw 0.0005453 mg/kg dw 0.00002102 mg/m3 0.00001839 mg/kg bw/day N/A xposure estimate/DNEL); PEC=P whether he works inside the bou e not expected to exceed the DN((Exection 2 are implemented. Where e should ensure that risks are man ensure doperating conditions whice	RCR 0.129 0.048 <0.01	Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water sediment Soil STP Human via environment, Inhalation Human via environment, Oral Human via environment, Oral Human via environment, Oral Human via environment, Combined routes RCR=Risk characterization ratio (PEC/PNEC or E 4. Guidance to the Downstream User to evaluate Health: Predicted exposures ar Conditions outlined in S are adopted, then users Environment: Guidance is based on a necessary to define app	umer TRA V3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.0006 mg/kg dw 0.00002293 mg/L 0.0005453 mg/kg dw 0.0000292 mg/kg dw 0.00002102 mg/m3 0.00001839 mg/kg bw/day N/A ixposure estimate/DNEL); PEC=P whether he works inside the bout e not expected to exceed the DN(Section 2 are implemented. Where is should ensure that risks are mantiportions which propriate site-specific risk manage	RCR 0.129 0.048 <0.01	Notes	
Assessment method-Health: CHESAR V2.2 Cons Assessment method-Environment: CHESAR V2.2 Health Effect/Compartment Consumer, long-term, systemic, Dermal Consumer, long-term, systemic, Oral Consumer, long-term, systemic, Combined route Consumer, long-term, local, Inhalation Environment Effect/Compartment Freshwater Freshwater sediment Marine water sediment Soil STP Human via environment, Inhalation Human via environment, Oral Human via environment, Oral Human via environment, Combined routes RCR=Risk characterization ratio (PEC/PNEC or E 4. Guidance to the Downstream User to evaluate Health: Predicted exposures ar Conditions outlined in S are adopted, then users Environment: Guidance is based on a necessary to define app can be achieved using unsafe use (i.e. BCRE	umer TRA V3. - EUSES v2.1. Exposure estimate/PEC 0.143 mg/kg bw/day 0.156 mg/m3 0 mg/kg bw/day s N/A 0.156 mg/m3 Exposure estimate/PEC 0.0002336 mg/L 0.0006 mg/kg dw 0.00002293 mg/L 0.0005453 mg/kg dw 0.0006992 mg/kg dw 0.00002102 mg/m3 0.00001839 mg/kg bw/day N/A Exposure estimate/DNEL); PEC=P whether he works inside the bouther e not expected to exceed the DN(I Section 2 are implemented. Where is should ensure that risks are mant assumed operating conditions white propriate site-specific risk manage onsite/offsite technologies, either as > 1) additional RMMs or a site-specific risk manage	RCR 0.129 0.048 <0.01	Notes	

1. Exposure scenario (7)			
Short title of the exposure scenario:	d cleaning products (Outdoors)		
List of use descriptors:			
Product category (PC): PC35			
Environmental release category (ERC): ERC8a, EF	RC8d		
Name of contributing environmental scenario and	corresponding ERCs:		
ERC8a Widespread use of non-reactive processing	aid (no inclusion into or onto ar	ticle, indoor).	
ERC8d Widespread use of non-reactive processing	j aid (no inclusion into or onto ar	ticle, outdoor).	
Further explanations:	anal aara producto, portumos op	d fragrances N	to For competie and personal care products
risk assessment only required for the environment	under REACH as human health	is covered by al	ternative legislation
Consumer application			
Generic exposure scenario: IFRA GES 6 (IU6).			
For further information on standardized use description	otors see the European Chemica	Agency (ECHA	A) Guidance on information requirements and
chemical safety assessment, Chapter R.12: Use de	escriptor system (http://guidance	.echa.europa.eu	i/docs/guidance document/
information_requirements_r12_en.pdf).			0 _
2. Conditions of use affecting exposure			
2.1 Control of consumer exposure			
General:			
For cosmetic and personal care products, risk asse	essment only required for the environment	rironment under	REACH as human health is covered by
alternative legislation.			
Product characteristics:			
Concentration of substance in mixture: Up to 0.001	g/g.		
Amounts used: Applied amounts for each use event: 50 g			
Frequency and duration of use/exposure:			
Duration covers exposure up to: 60 minutes/event			
Frequency - covers use frequency: up to 1 time/da	av: 365 times/vear		
Human factors not influenced by risk management	nt:		
Exposed skin surface: Hands.			
Dermal transfer factor=1.			
2.2 Control of environmental exposure			
Product characteristics:			
Physical state: liquid.			
Vapour pressure: <0.5 kPa.			
Amounts used:			
Daily wide dispersive use: 0,00000275 tons/day.	/		
Frequency and duration of use:	0.		
Wide dispersive use			
Environmental factors not influenced by risk man	agement:		
Flow rate of receiving surface water: >=18.000 m3/	/day (default).		
Other given operational conditions affecting envir	onmental exposure:		
Outdoor use.			
Release fraction to air from process (initial release)): 1.00; (final release): 1.00.		
Release fraction to wastewater from process (initia	I release): 1.00; (final release): 1	.00. Local releas	se rate: 0.003 kg/day.
Release fraction to soil from process (final release)): 0.20.		
Technical onsite conditions and measures to redu	uce or limit discharges, air emis	sions and relea	ses to soil:
Dry sludge application to agricultural soil: Yes (defa	ault).		
Conditions and measures related to municipal set	wage treatment plant:		
Size of municipal sewage system/treatment plant:	1000000000000000000000000000000000000		
Conditions and measures related to external treat	ment of waste for disposal:		
External treatment and disposal of waste should co	moly with applicable local and/o	r national regula	ations
Particular considerations on the waste treatment or	perations: No (low risk) (ERC ba	sed assessment	t demonstrating control of risk with default
conditions. Low risk assumed for waste life stage.	Waste disposal according to nati	onal/local legisla	ation is sufficient.)
Conditions and measures related to external reco	very of waste:		•
External recovery and recycling of waste should co	mply with applicable local and/o	r national regula	tions.
Additional good practice advice:			
All risk management measures utilised must also c	omply with all relevant local regu	lations.	
3. Exposure estimation and reference to its source	<u> </u>		
Assessment method-Health: CHESAR V2.2 Consu	imer TRA v3.		
Assessment method-Environment: CHESAR V2.2	- EUSES v2.1.		
Health			
Effect/Compartment	Exposure estimate/PEC	RCR	Notes
Consumer, long-term, systemic, Dermal	0.143 mg/kg bw/day	0.129	

Effect/Compartment		Exposure estimate/PEC	RCR	Notes
Consumer, long-term, sy	stemic, Inhalation	0.156 mg/m3	0.048	
Consumer, long-term, sy	/stemic, Oral	0 mg/kg bw/day	<0.01	
Consumer, long-term, sy	stemic, Combined routes	N/A	0.177	
Consumer, long-term, lo	cal, Inhalation	0.156 mg/m3	0.048	
Environment				
Effect/Compartment		Exposure estimate/PEC	RCR	<u>Notes</u>
Freshwater		0.00009742 mg/L	0.081	
Freshwater sediment		0.002 mg/kg dw	0.057	
Marine water		0.000009314 mg/L	0.078	
Marine water sediment		0.0002215 mg/kg dw	0.055	
Soil		0.00009345 mg/kg dw	0.013	
STP		0.0001703 mg/L	<0.01	
Human via environment	, Inhalation	0.000002091 mg/m3	<0.01	
Human via environment	, Oral	0.00000782 mg/kg bw/day	<0.01	
Human via environment	. Combined routes	N/A	<0.01	
RCR=Risk characterizati	on ratio (PEC/PNEC or Exp	osure estimate/DNEL); PEC=Pre	dicted enviror	nmental concentration.
4. Guidance to the Down	stream User to evaluate w	nether he works inside the bound	laries set by	the FS
Health:	Predicted exposures are n	ot expected to exceed the DN(M)	EL when the	Risk Management Measures/Operational
	Conditions outlined in Sec are adopted, then users sh	tion 2 are implemented. Where on the second se	ther Risk Mar ged to at least	nagement Measures/Operational Conditions tequivalent levels.
Environment:	Guidance is based on ass	umed operating conditions which	may not be a	pplicable to all sites; thus, scaling may be
	necessary to define appro	priate site-specific risk managem	ent measures	s. Required removal efficiency for wastewater
	unsafe use (i.e. RCRs > 1) additional RMMs or a site-spec	one or in com	safety assessment is required
Exposure scenario (8):	Lise by professional wor	kers - Professional use of nol	ishes and w	ax blends
1. Exposure scenario (8)				
Short title of the exposur	e scenario:			
Use by professional work	ers - Professional use of po	lishes and wax blends		
List of use descriptors:				
Sector of use category (S	60): S00 C31			
Process category (PROC	;): PROC2. PROC8a. PROC	C8b. PROC10. PROC11.		
Environmental release ca	tegory (ERC): ERC8a			
List of names of contribu	ting worker scenarios and	corresponding PROCs:		
PROC2 Chemical produc	tion or refinery in closed co	ntinuous process with occasional	controlled ex	posure or processes with equivalent
PROC8a Transfer of sub	stance or mixture (charging	and discharging) at non-dedicate	d facilities. Ti	ransfer includes loading, filling, dumping,
bagging and weighing.		and discharging) at non-dedicate		anoron moradoo roading, ming, damping,
PROC8b Transfer of sub	stance or mixture (charging	and discharging) at dedicated fac	cilities. Transf	fer includes loading, filling, dumping, bagging.
PROC10 Roller application	on or brushing. This include	s application of paints, coatings,	emovers, adl	hesives or cleaning agents to surfaces with
PROC11 Non industrial s	j from splasnes. praving Air dispersive tech	niques i e dispersion into air (= a	tomization) h	v e a pressurized air hydraulic pressure or
centrifugation, applicable	for liquids and powders.			y e.g. pressurized an, nyuradile pressure of
Name of contributing en	vironmental scenario and c	orresponding ERCs:		
ERC8a Widespread use	of non-reactive processing a	aid (no inclusion into or onto artic	e, indoor).	
Further explanations:				
Exposure scenar	10: IFRA GES 5 (105). I re-nacking of the substanc	e and its mixtures in batch or con	tinuous opera	ations including storage materials transfers
mixing, tabletting, compre	ession. pelletisation. extrusion	on, large and small scale packing	. samplina. m	naintenance and associated laboratory
activities.	,,		,p 9 ,	
Professional application.				
For further information or	standardized use descripto	ors see the European Chemical A	gency (ECHA	A) Guidance on information requirements and
information requirements	s r12 en ndf)	chptor system (http://guidance.ed	na.europa.eu	a/docs/guidance_document/
2. Conditions of use affect	cting exposure			
2.1 Control of workers ex	posure			
General:				
Generally accepted stand	lards of occupational hygier	ne are maintained. Smoking, eatir	ng and drinkin	ng are prohibited at the workplace. Spills are
Product characteristics:				
Concentration of substan	ce: Up to 1%.			
Physical state: liquid.				
Frequency and duration	of use/exposure:			
Duration:	hauna (dau			
	nnure/dav			

- PROC8a, PROC10: <=4 hours/day.

- PROC11: <=1 hour/day. Human factors not influenced by risk management: Exposed skin surface: - 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 workers exposure: Location: Indoor use. Domain: Professional use. Process temperature (for liquid): <= 40 °C. Technical conditions and measures to control dispersion from source towards the worker: General ventilation: - PROC2, PROC10: Basic general ventilation (1-3 air changes per hour): 0%. - PROC8b: Good general ventilation (3-5 air changes per hour): 30%. - PROC8a, PROC11: Enhanced general ventilation (5-10 air changes per hour): 70%. 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. Occupational Health and Safety Management System: Basic. Conditions and measures related to personal protection, hygiene and health evaluation: Respiratory protection: Not required. Dermal protection: - PROC2, PROC8a, PROC8b: No (Effectiveness Dermal: 0%). PROC10: Yes (chemically resistant gloves conforming to EN374) (Effectiveness Dermal: 80%). - PROC11: Yes (chemically resistant gloves conforming to EN374 with basic employee training) (Effectiveness Dermal: 90%). Additional good practice advice: 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. 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: <0.5 kPa. Amounts used: Daily wide dispersive use: 0.000006875 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 environmental exposure: Professional 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: 0.007 kg/day. Release fraction to soil from process (final release): 0,0. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Dry sludge application to agricultural soil: Yes (default). Conditions and measures related to municipal sewage treatment plant: Municipal Sewage Treatment Plant (STP): Yes (Efficiency=87.61%). Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town). Conditions and measures related to external treatment of waste for disposal: External treatment and disposal of waste should comply with applicable local and/or national regulations. 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.) 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: All risk management measures utilised must also comply with all relevant local regulations.

3. Exposure estimation and reference to its source

Assessment method-Health: CHESAR V2.2 Worker TRA v3. Only highest figures are presented here. Assessment method-Environment: CHESAR V2.2 - EUSES v2.1.

Health

Effect/Compartment		Exposure estimate/PEC	<u>RCR</u>	<u>Notes</u>
Worker, long-term, systemic, E	Dermal	1.371 mg/kg bw/day	0.62	PROC8a, PROC8b
Worker, long-term, systemic, l	nhalation	9.137 mg/m3	0.687	PROC10
Worker, long-term, systemic, C	Combined routes	N/A	0.941	PROC8b
Worker, long-term, local, Derm	nal	0.1 mg/cm2	0.029	PROC8a, PROC8b
Worker, long-term, local, Inhal	ation	9.137 mg/m3	0.687	PROC10
Environment				
Effect/Compartment		Exposure estimate/PEC	<u>RCR</u>	<u>Notes</u>
Freshwater		0.000123 mg/L	0.103	
Freshwater sediment		0.003 mg/kg dw	0.072	
Marine water		0.00001187 mg/L	0.099	
Marine water sediment		0.0002822 mg/kg dw	0.07	
Soil		0.000207 mg/kg dw	0.029	
STP		0.0004258 mg/L	<0.01	
Human via environment, Inhala	ation	0.000002093 mg/m3	<0.01	
Human via environment. Oral		0.000009802 mg/kg bw/day	<0.01	
Human via environment. Com	bined routes	N/A	< 0.01	
RCR=Risk characterization ratio	o (PEC/PNEC or Expo	osure estimate/DNEL); PEC=Pre	dicted environmer	tal concentration.
4. Guidance to the Downstream	n l leor to ovaluato wh	ether he works inside the bound	larice eat by the F	S C C C C C C C C C C C C C C C C C C C
Health: Pred	icted exposures are n	ot expected to exceed the DN(M)	Fl when the Risk	Management Measures/Operational
Conc	ditions outlined in Sect	ion 2 are implemented. Where of	her Risk Manager	nent Measures/Operational Conditions
are a	dopted, then users sh	ould ensure that risks are manag	ed to at least equi	valent levels. Duration: PROC2,
PRO	C8b: <=8 hours/day.	PROC8a, PROC10: <=4 hours/da	ay. PROC11: <=1	hour/day. Dermal protection: PROC2,
PRO (Effo	C8a, PROC8b: No (E	tectiveness Dermal: 0%). PROC	10: Yes (chemical	ly resistant gloves conforming to EN3/4)
traini	(Effectiveness De	rmal: 90%) Concentration of su	bstance: Up to 1%	offning to EN374 with basic employee
Environment: Guid	ance is based on assu	imed operating conditions which	may not be applic	able to all sites; thus, scaling may be
nece	ssary to define approp	priate site-specific risk managem	ent measures. Red	quired removal efficiency for wastewater
can b	be achieved using ons	ite/offsite technologies, either alo	one or in combinat	on. If scaling reveals a condition of
	f		if a share is a large for the second se	
	fe use (i.e., RCRs > 1), additional RMMs or a site-spec	ific chemical safe	y assessment is required.
Exposure scenario (9): Const 1 Exposure scenario (9)	fe use (i.e., RCRs > 1 umer use - Consum), additional RMMs or a site-spec er end-use of polishes and w	ific chemical safet ax blends	y assessment is required.
Exposure scenario (9): Consi 1. Exposure scenario (9) Short title of the exposure scen	fe use (i.e., RCRs > 1 umer use - Consum), additional RMMs or a site-spec er end-use of polishes and w	ific chemical safet ax blends	y assessment is required.
Exposure scenario (9): Conse 1. Exposure scenario (9) Short title of the exposure scen Consumer use - Consumer end	fe use (i.e., RCRs > 1 umer use - Consum nario: I-use of polishes and v), additional RMMs or a site-spec er end-use of polishes and w wax blends	ific chemical safet ax blends	y assessment is required.
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen Consumer use - Consumer end List of use descriptors:	fe use (i.e., RCRs > 1 umer use - Consum nario: I-use of polishes and v), additional RMMs or a site-spec er end-use of polishes and w wax blends	ific chemical safet ax blends	y assessment is required.
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scenario Consumer use - Consumer end List of use descriptors: Product category (PC): PC31	fe use (i.e., RCRs > 1 umer use - Consum nario: I-use of polishes and v), additional RMMs or a site-spec er end-use of polishes and w wax blends	ific chemical safet	y assessment is required.
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category	fe use (i.e., RCRs > 1 umer use - Consum nario: I-use of polishes and v / (ERC): ERC8a), additional RMMs or a site-spec er end-use of polishes and w vax blends	ific chemical safet ax blends	y assessment is required.
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm EPC% Widespread use of page	fe use (i.e., RCRs > 1 umer use - Consum nario: -use of polishes and v (ERC): ERC8a nental scenario and co), additional RMMs or a site-spec er end-use of polishes and w vax blends	ax blends	y assessment is required.
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scenario Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Euther explanations:	fe use (i.e., RCRs > 1 umer use - Consum nario: -use of polishes and v / (ERC): ERC8a nental scenario and co -reactive processing a), additional RMMs or a site-spec er end-use of polishes and w vax blends prresponding ERCs: id (no inclusion into or onto articl	ific chemical safet ax blends e, indoor).	y assessment is required.
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrie	fe use (i.e., RCRs > 1 umer use - Consum nario: I-use of polishes and v ((ERC): ERC8a iental scenario and co -reactive processing a r in cosmetics/person), additional RMMs or a site-spec er end-use of polishes and w vax blends prresponding ERCs: id (no inclusion into or onto articl al care products, perfumes and fi	ific chemical safet ax blends e, indoor). agrances. Note: F	or cosmetic and personal care products.
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrie risk assessment only required f	fe use (i.e., RCRs > 1 umer use - Consum nario: I-use of polishes and v (ERC): ERC8a nental scenario and co -reactive processing a r in cosmetics/persona for the environment un), additional RMMs or a site-spec er end-use of polishes and w wax blends prresponding ERCs: id (no inclusion into or onto articl al care products, perfumes and fi der REACH as human health is o	e, indoor). e, indoor). eovered by alterna	or cosmetic and personal care products, tive legislation.
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scenario (9) Short title of the exposure scenario (9) List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required ff Consumer application.	fe use (i.e., RCRs > 1 umer use - Consum nario: -use of polishes and v (ERC): ERC8a nental scenario and co -reactive processing a r in cosmetics/persona or the environment un), additional RMMs or a site-spec er end-use of polishes and w wax blends prresponding ERCs: id (no inclusion into or onto articl al care products, perfumes and fi der REACH as human health is o	e, indoor). agrances. Note: F covered by alterna	or cosmetic and personal care products, tive legislation.
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scenario (9) Short title of the exposure scenario Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required ff Consumer application. Generic exposure scenario: IFF Exposure scenario: IFF	fe use (i.e., RCRs > 1 umer use - Consum nario: I-use of polishes and v (ERC): ERC8a nental scenario and co -reactive processing a r in cosmetics/persona for the environment un RA GES 9 (IU9).), additional RMMs or a site-spec er end-use of polishes and w wax blends brresponding ERCs: id (no inclusion into or onto articl al care products, perfumes and fi der REACH as human health is o	e, indoor). agrances. Note: F covered by alterna	or cosmetic and personal care products, tive legislation.
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen- Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required f Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment only	fe use (i.e., RCRs > 1 umer use - Consum nario: I-use of polishes and v / (ERC): ERC8a nental scenario and ca -reactive processing a r in cosmetics/person: for the environment un RA GES 9 (IU9). lardized use descripto hanter R 12: Use desc), additional RMMs or a site-spec er end-use of polishes and w wax blends orresponding ERCs: id (no inclusion into or onto articl al care products, perfumes and fi der REACH as human health is o rs see the European Chemical A	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu	or cosmetic and personal care products, tive legislation.
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrie risk assessment only required f Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12	fe use (i.e., RCRs > 1 umer use - Consum hario: l-use of polishes and v / (ERC): ERC8a hental scenario and co -reactive processing a r in cosmetics/persona for the environment un RA GES 9 (IU9). lardized use descripto hapter R.12: Use desc en.pdf).	additional RMMs or a site-specter er end-use of polishes and w vax blends prresponding ERCs: id (no inclusion into or onto article al care products, perfumes and finder REACH as human health is of the result of the second secon	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu ha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required f Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting e	fe use (i.e., RCRs > 1 umer use - Consum nario: I-use of polishes and v (ERC): ERC8a rental scenario and co -reactive processing a r in cosmetics/persona or the environment un RA GES 9 (IU9). lardized use descripto hapter R.12: Use desc en.pdf). xposure	additional RMMs or a site-spece er end-use of polishes and w vax blends prresponding ERCs: id (no inclusion into or onto article al care products, perfumes and fr der REACH as human health is of the respondent of the second second second second rs see the European Chemical A criptor system (http://guidance.ec	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu tha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required f Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting environment 2.1 Control of consumer expose	fe use (i.e., RCRs > 1 umer use - Consum nario: I-use of polishes and v (ERC): ERC8a nental scenario and co -reactive processing a r in cosmetics/persona for the environment un RA GES 9 (IU9). lardized use descripto hapter R.12: Use desc en.pdf). xposure ure	additional RMMs or a site-spece er end-use of polishes and w vax blends prresponding ERCs: id (no inclusion into or onto article al care products, perfumes and fi der REACH as human health is of the rest of the European Chemical A criptor system (http://guidance.ec	e, indoor). e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu tha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required ff Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting environments General:	fe use (i.e., RCRs > 1 umer use - Consum nario: I-use of polishes and v (ERC): ERC8a nental scenario and co -reactive processing a r in cosmetics/persona or the environment un RA GES 9 (IU9). lardized use descripto hapter R.12: Use desc en.pdf). ixposure ure), additional RMMs or a site-spece er end-use of polishes and w wax blends prresponding ERCs: id (no inclusion into or onto article al care products, perfumes and fi der REACH as human health is of rs see the European Chemical A priptor system (http://guidance.eo	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu ha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen- Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required from the consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting end 2. Control of consumer exposes General: For cosmetic and personal care alternative logislation	fe use (i.e., RCRs > 1 umer use - Consum hario: l-use of polishes and v ((ERC): ERC8a hental scenario and ca reactive processing a r in cosmetics/persona or the environment un RA GES 9 (IU9). lardized use descripto hapter R.12: Use desc en.pdf). hyposure ure e products, risk assess	additional RMMs or a site-spece er end-use of polishes and w vax blends prresponding ERCs: id (no inclusion into or onto article al care products, perfumes and fi der REACH as human health is of the respondence of the environ- ment only required for the environ-	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu ha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen- Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required f Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting e 2.1 Control of consumer expose General: For cosmetic and personal care alternative legislation. Product characteristics:	fe use (i.e., RCRs > 1 umer use - Consum hario: -use of polishes and v ((ERC): ERC8a hental scenario and ca -reactive processing a r in cosmetics/person: for the environment un RA GES 9 (IU9). lardized use descripto hapter R.12: Use desc en.pdf). hyposure ure products, risk assess	additional RMMs or a site-spece er end-use of polishes and w vax blends prresponding ERCs: id (no inclusion into or onto article al care products, perfumes and finder REACH as human health is of the residence of the service of the service ment only required for the environ-	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu ha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/ CH as human health is covered by
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen- Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required f Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting e 2.1 Control of consumer expose General: For cosmetic and personal care alternative legislation. Product characteristics: Concentration of substance in r	fe use (i.e., RCRs > 1 umer use - Consum nario: l-use of polishes and v / (ERC): ERC8a mental scenario and ca -reactive processing a r in cosmetics/person: for the environment un RA GES 9 (IU9). lardized use descripto hapter R.12: Use desc en.pdf). products, risk assess mixture: Up to 0.001 g/	additional RMMs or a site-spece er end-use of polishes and w vax blends prresponding ERCs: id (no inclusion into or onto article al care products, perfumes and fr der REACH as human health is of the respondent of the environ- second of the environ- ment only required for the environ- g.	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu tha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen- Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required f Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting e 2.1 Control of consumer expose General: For cosmetic and personal care alternative legislation. Product characteristics: Concentration of substance in r Physical state: liquid.	fe use (i.e., RCRs > 1 umer use - Consum hario: l-use of polishes and v / (ERC): ERC8a hental scenario and co -reactive processing a r in cosmetics/person: for the environment un RA GES 9 (IU9). lardized use descripto hapter R.12: Use desc en.pdf). hyposure ure a products, risk assess mixture: Up to 0.001 g/	additional RMMs or a site-spece er end-use of polishes and w vax blends prresponding ERCs: id (no inclusion into or onto article al care products, perfumes and fr der REACH as human health is of the rescale of the service of the service ment only required for the environ g.	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu tha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/ CH as human health is covered by
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrie risk assessment only required f Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting e 2.1 Control of consumer expos General: For cosmetic and personal care alternative legislation. Product characteristics: Concentration of substance in r Physical state: liquid. Amounts used:	fe use (i.e., RCRs > 1 umer use - Consum hario: 	additional RMMs or a site-spece er end-use of polishes and w vax blends prresponding ERCs: id (no inclusion into or onto article al care products, perfumes and fi der REACH as human health is of the rest of the environ rs see the European Chemical A criptor system (http://guidance.eo ment only required for the environ g.	ific chemical safet ax blends e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu ha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/ CH as human health is covered by
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrie risk assessment only required f Consumer uses e.g. as a carrie risk assessment only required f Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting e 2.1 Control of consumer expos General: For cosmetic and personal care alternative legislation. Product characteristics: Concentration of substance in r Physical state: liquid. Amounts used: Applied amounts for each use e	fe use (i.e., RCRs > 1 umer use - Consum hario: -use of polishes and v (ERC): ERC8a hental scenario and co -reactive processing a r in cosmetics/persona or the environment un RA GES 9 (IU9). lardized use descripto hapter R.12: Use desc en.pdf). ixposure ure products, risk assess mixture: Up to 0.001 g/ event: 550 g.	additional RMMs or a site-spece er end-use of polishes and w vax blends prresponding ERCs: id (no inclusion into or onto article al care products, perfumes and fi der REACH as human health is of rs see the European Chemical A priptor system (http://guidance.ecc ment only required for the environ g.	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu ha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/ CH as human health is covered by
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen- Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required from the exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting environments General: For cosmetic and personal care alternative legislation. Product characteristics: Concentration of substance in r Physical state: liquid. Amounts used: Applied amounts for each use environments of use and puration course avecause in the substance of the substan	fe use (i.e., RCRs > 1 umer use - Consum hario: 	additional RMMs or a site-specer er end-use of polishes and w vax blends prresponding ERCs: id (no inclusion into or onto article al care products, perfumes and finder REACH as human health is of the react of the service of t	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu ha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/ CH as human health is covered by
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen- Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrie risk assessment only required f Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting e 2.1 Control of consumer exposs General: For cosmetic and personal care alternative legislation. Product characteristics: Concentration of substance in r Physical state: liquid. Amounts used: Applied amounts for each use of Frequency and duration of use Duration covers exposure up to Frequency - covers use frequency	fe use (i.e., RCRs > 1 umer use - Consum hario: -use of polishes and v ((ERC): ERC8a hental scenario and ca -reactive processing a r in cosmetics/persona or the environment un RA GES 9 (IU9). lardized use descripto hapter R.12: Use desc en.pdf). xposure ure e products, risk assess mixture: Up to 0.001 g/ event: 550 g. /exposure: : 4 hours/event. hours/event. by: 1 time/day:	additional RMMs or a site-specer er end-use of polishes and war a site-specer erast of the second seco	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu ha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/ CH as human health is covered by
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen- Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required f Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting e 2.1 Control of consumer expose General: For cosmetic and personal care alternative legislation. Product characteristics: Concentration of substance in r Physical state: liquid. Amounts used: Applied amounts for each use e Frequency and duration of use Duration covers exposure up to Frequency - covers use frequer Human factors not influenced	fe use (i.e., RCRs > 1 umer use - Consum hario: -use of polishes and v ((ERC): ERC8a hental scenario and ca -reactive processing a r in cosmetics/person: for the environment un RA GES 9 (IU9). lardized use descripto hapter R.12: Use desc en.pdf). exposure ure e products, risk assess nixture: Up to 0.001 g/ event: 550 g. /exposure: : 4 hours/event. hoy: up to 1 time/day; by risk management:	additional RMMs or a site-specer er end-use of polishes and war a site specer erase of polishes and set as a site specer erase of the set as a site specer erase and find a site of the set as a site specer erase of the set as a site specer era	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu ha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/ CH as human health is covered by
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen- Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required f Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting e 2.1 Control of consumer expose General: For cosmetic and personal care alternative legislation. Product characteristics: Concentration of substance in r Physical state: liquid. Amounts used: Applied amounts for each use e Frequency and duration of use Duration covers exposure up to Frequency - covers use frequer Human factors not influenced I Exposed skin surface: Hands.	fe use (i.e., RCRs > 1 umer use - Consum hario: l-use of polishes and v / (ERC): ERC8a hental scenario and ca -reactive processing a r in cosmetics/person: for the environment un RA GES 9 (IU9). lardized use descripto hapter R.12: Use desc en.pdf). hapter R.12: Use desc en.pdf). ha	additional RMMs or a site-specer er end-use of polishes and ware a site-specer er end-use of polishes and ware a site-specer er end-use of polishes and ware a site specer erast of the second seco	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu ha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/ CH as human health is covered by
Exposure scenario (9): Const 1. Exposure scenario (9) Short title of the exposure scen- Consumer use - Consumer end List of use descriptors: Product category (PC): PC31 Environmental release category Name of contributing environm ERC8a Widespread use of non- Further explanations: Consumer uses e.g. as a carrier risk assessment only required f Consumer application. Generic exposure scenario: IFF For further information on stand chemical safety assessment, C information_requirements_r12_ 2. Conditions of use affecting e 2.1 Control of consumer expose General: For cosmetic and personal care alternative legislation. Product characteristics: Concentration of substance in r Physical state: liquid. Amounts used: Applied amounts for each use e Frequency and duration of use Duration covers exposure up to Frequency - covers use frequer Human factors not influenced I Exposed skin surface: Hands. Dermal transfer factor=1.	fe use (i.e., RCRs > 1 umer use - Consum nario: l-use of polishes and v / (ERC): ERC8a nental scenario and ca -reactive processing a r in cosmetics/person: for the environment un RA GES 9 (IU9). lardized use descripto hapter R.12: Use desc en.pdf). xposure ure e products, risk assess mixture: Up to 0.001 g/ event: 550 g. /exposure: x 4 hours/event. hcy: up to 1 time/day; by risk management:	additional RMMs or a site-specer er end-use of polishes and ware a site-specer er end-use of polishes and ware a site-specer er end-use of polishes and ware a site specer era a specific era base of the specer era a specific era base of the specer era a specific era a speci	e, indoor). agrances. Note: F covered by alterna gency (ECHA) Gu tha.europa.eu/doc	or cosmetic and personal care products, tive legislation. idance on information requirements and s/guidance_document/ CH as human health is covered by

Product characteristics: Physical state: liquid. Vapour pressure: <0.5 kF	Pa.				
Amounts used: Daily wide dispersive use Percentage of tonnage us	e: 0.000006875 tons/day. sed at regional scale: 10 %.				
Frequency and duration	of use:				
Environmental factors no Flow rate of receiving sur	ot influenced by risk manag face water: >=18000 m3/da	gement: iv (default).			
Other given operational	conditions affecting enviror	nmental exposure:			
Release fraction to air fro	m process (initial release):	1,00; (final release): 1,00.		ee rete: 0.007 kg/day	
Release fraction to waste	om process (final release): (elease): 1.00; (final release): 1.0 0.0.	JU. Local relea	se rate: 0.007 kg/day.	
Technical onsite condition Dry sludge application to	ons and measures to reduc agricultural soil: Yes (defau	e or limit discharges, air emiss Ilt).	ions and relea	ses to soil:	
Conditions and measure	s related to municipal sewa	age treatment plant:			
Size of municipal sewage	nent Plant (STP): Yes (Effice system/treatment plant: >=	ciency=87.61%). =2000 m3/day (standard town)			
Conditions and measure	s related to external treatm	nent of waste for disposal:			
External treatment and di	sposal of waste should com	nply with applicable local and/or	national regula	ations.	
Particular considerations	on the waste treatment ope	erations: No (low risk) (ERC base	ed assessmen nal/local legisl	t demonstrating control of risk with defa	ult
Conditions and measure	s related to external recover	ery of waste:		alion is sufficient.)	
External recovery and rec	cycling of waste should com	iply with applicable local and/or	national regula	itions.	
All risk management mea	auvice. Isures utilised must also cor	mply with all relevant local regula	ations.		
3. Exposure estimation a	nd reference to its source				
Assessment method-Hea	Ith: CHESAR V2.2 Consum	ner TRA v3.			
Assessment method-Env	ironment: CHESAR V2.2 - E	EUSES v2.1.			
Health					
Effect/Compartment		Exposure estimate/PEC	<u>RCR</u>	<u>Notes</u>	
Consumer, long-term, sy	ystemic, Dermal	0.143 mg/kg bw/day	0.129		
Consumer, long-term, sy	stemic, Inhalation	0.809 mg/m3	0.247		
Consumer, long-term, sy	ystemic, Oral	0 mg/kg bw/day	<0.01		
Consumer, long-term, sy Consumer, long-term, sy	ystemic, Oral ystemic, Combined routes	0 mg/kg bw/day N/A	<0.01 0.376		
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo	ystemic, Oral ystemic, Combined routes cal, Inhalation	0 mg/kg bw/day N/A 0.809 mg/m3	<0.01 0.376 0.247		
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment	ystemic, Oral ystemic, Combined routes ical, Inhalation	0 mg/kg bw/day N/A 0.809 mg/m3	<0.01 0.376 0.247	Natao	
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment	ystemic, Oral ystemic, Combined routes cal, Inhalation	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC	<0.01 0.376 0.247 RCR 0.102	Notes	
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater	ystemic, Oral ystemic, Combined routes cal, Inhalation	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L	<0.01 0.376 0.247 RCR 0.103 0.072	Notes	
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water	ystemic, Oral ystemic, Combined routes ical, Inhalation	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.003 mg/kg dw 0.00001187 mg/l	<0.01 0.376 0.247 RCR 0.103 0.072 0.099	<u>Notes</u>	
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water sediment	ystemic, Oral ystemic, Combined routes ocal, Inhalation	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.003 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07	<u>Notes</u>	
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water sediment Soil	ystemic, Oral ystemic, Combined routes ical, Inhalation	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.003 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000207 mg/kg dw	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029	Notes	
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater Marine water Marine water sediment Soil STP	ystemic, Oral ystemic, Combined routes cal, Inhalation	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.003 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000207 mg/kg dw 0.0004258 mg/l	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029 <0.01	Notes	
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water sediment Soil STP Human via environment	ystemic, Oral ystemic, Combined routes ical, Inhalation	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.003 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000207 mg/kg dw 0.0004258 mg/L 0.00002093 mg/m3	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029 <0.01 <0.01	<u>Notes</u>	
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water Soil STP Human via environment	ystemic, Oral ystemic, Combined routes ocal, Inhalation , Inhalation Oral	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.0003 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000207 mg/kg dw 0.0004258 mg/L 0.00002093 mg/m3 0.000009802 mg/kg bw/day	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029 <0.01 <0.01 <0.01	Notes	
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water Soil STP Human via environment Human via environment	ystemic, Oral ystemic, Combined routes ocal, Inhalation , Inhalation , Oral , Combined routes	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.003 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000207 mg/kg dw 0.0004258 mg/L 0.00002093 mg/m3 0.000009802 mg/kg bw/day N/A	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029 <0.01 <0.01 <0.01 <0.01 <0.01	Notes	
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water sediment Marine water sediment Soil STP Human via environment Human via environment RCR=Risk characterizatio	ystemic, Oral ystemic, Combined routes ical, Inhalation , Inhalation , Oral , Combined routes on ratio (PEC/PNEC or Exp	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.003 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000227 mg/kg dw 0.00002093 mg/m3 0.000009802 mg/kg bw/day N/A osure estimate/DNEL); PEC=Pr	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029 <0.01 <0.01 <0.01 <0.01 redicted enviro	Notes Notes	
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water sediment Soil STP Human via environment Human via environment RCR=Risk characterization 4. Guidance to the Down Health:	ystemic, Oral ystemic, Combined routes ical, Inhalation , Inhalation , Oral , Combined routes on ratio (PEC/PNEC or Exp stream User to evaluate wi Predicted exposures are n Conditions outlined in Sec	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.000 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000207 mg/kg dw 0.0004258 mg/L 0.000002093 mg/m3 0.000009802 mg/kg bw/day N/A osure estimate/DNEL); PEC=Pr hether he works inside the bour not expected to exceed the DN(N tion 2 are implemented. Where of	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029 <0.01 <0.01 <0.01 <0.01 <0.01 edicted enviro ndaries set by <i>I</i>)EL when the other Risk Mar	Notes Notes nmental concentration. the ES Risk Management Measures/Operation agement Measures/Operational Condi	ions
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water sediment Soil STP Human via environment Human via environment RCR=Risk characterizatio 4. Guidance to the Down Health:	ystemic, Oral ystemic, Combined routes ical, Inhalation , Inhalation , Oral , Combined routes on ratio (PEC/PNEC or Exp stream User to evaluate with Predicted exposures are in Conditions outlined in Sec are adopted, then users sh	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.000 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000207 mg/kg dw 0.000207 mg/kg dw 0.00002093 mg/m3 0.000009802 mg/kg bw/day N/A osure estimate/DNEL); PEC=Pr hether he works inside the bour to expected to exceed the DN(N tion 2 are implemented. Where on house that risks are managed	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 edicted enviro ndaries set by <i>I</i>)EL when the other Risk Mar aged to at least	Notes Notes nmental concentration. the ES Risk Management Measures/Operation agement Measures/Operational Condit t equivalent levels.	hal
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water sediment Soil STP Human via environment Human via environment RCR=Risk characterizatio 4. Guidance to the Down Health: Environment:	ystemic, Oral ystemic, Combined routes ical, Inhalation , Inhalation , Oral , Combined routes on ratio (PEC/PNEC or Exp stream User to evaluate wi Predicted exposures are n Conditions outlined in Sec are adopted, then users sh Guidance is based on ass necessary to define appro can be achieved using ons unsafe use (i.e., RCRs > 1	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.003 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000207 mg/kg dw 0.000207 mg/kg dw 0.00002093 mg/m3 0.000002093 mg/m3 0.000009802 mg/kg bw/day N/A osure estimate/DNEL); PEC=Pr hether he works inside the bour not expected to exceed the DN(N tion 2 are implemented. Where the nould ensure that risks are mana- umed operating conditions whic priate site-specific risk manager site/offsite technologies, either a 1), additional RMMs or a site-specific	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 sedicted enviro ndaries set by <i>A</i>)EL when the other Risk Mar aged to at least h may not be a ment measures lone or in com secific chemical	Notes Notes nmental concentration. the ES Risk Management Measures/Operation agement Measures/Operational Condit t equivalent levels. applicable to all sites; thus, scaling may s. Required removal efficiency for waster bination. If scaling reveals a condition of safety assessment is required.	nal ions be water f
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water sediment Soil STP Human via environment Human via environment Human via environment RCR=Risk characterization A. Guidance to the Down Health: Environment:	ystemic, Oral ystemic, Combined routes ical, Inhalation , Inhalation , Oral , Combined routes on ratio (PEC/PNEC or Exp stream User to evaluate wi Predicted exposures are in Conditions outlined in Sec are adopted, then users st Guidance is based on ass necessary to define appro can be achieved using ons unsafe use (i.e., RCRs > 1 : Consumer use - Consu	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.003 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000207 mg/kg dw 0.000207 mg/kg dw 0.00002093 mg/m3 0.000002093 mg/m3 0.000009802 mg/kg bw/day N/A osure estimate/DNEL); PEC=Pr hether he works inside the bour to expected to exceed the DN(N tion 2 are implemented. Where on both the specific risk manager site/offsite technologies, either a 1), additional RMMs or a site-specific risk manager inter end-use of air care proce	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 edicted enviro ndaries set by <i>A</i>)EL when the other Risk Mar aged to at least h may not be a ment measures lone or in com acific chemical ducts	Notes Notes nmental concentration. the ES Risk Management Measures/Operation hagement Measures/Operational Condit t equivalent levels. hpplicable to all sites; thus, scaling may s. Required removal efficiency for waster bination. If scaling reveals a condition of safety assessment is required.	hal ions be water f
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water sediment Soil STP Human via environment Human via environment Human via environment RCR=Risk characterizatio 4. Guidance to the Down Health: Environment: Exposure scenario (10) Stept title of the curver	ystemic, Oral ystemic, Combined routes ical, Inhalation , Inhalation , Oral , Combined routes on ratio (PEC/PNEC or Exp stream User to evaluate will Predicted exposures are in Conditions outlined in Sec are adopted, then users sh Guidance is based on ass necessary to define appro can be achieved using ons unsafe use (i.e., RCRs > 1 : Consumer use - Consu)	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.003 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000207 mg/kg dw 0.000207 mg/kg dw 0.00002093 mg/m3 0.000009802 mg/kg bw/day N/A osure estimate/DNEL); PEC=Pr hether he works inside the bour not expected to exceed the DN(N tion 2 are implemented. Where the nould ensure that risks are mana umed operating conditions whic priate site-specific risk manager site/offsite technologies, either a 1), additional RMMs or a site-specific mer end-use of air care proce	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 edicted enviro ndaries set by <i>A</i>)EL when the other Risk Mara aged to at least h may not be a ment measures lone or in com ecific chemical Jucts	Notes	nal ions be water f
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water sediment Soil STP Human via environment Human via environment Human via environment RCR=Risk characterizatio 4. Guidance to the Down Health: Environment: Exposure scenario (10) 1. Exposure scenario (10) Short title of the exposur Consumer use - Consum	ystemic, Oral ystemic, Combined routes ical, Inhalation , Inhalation , Inhalation , Oral , Combined routes on ratio (PEC/PNEC or Exp stream User to evaluate will Predicted exposures are m Conditions outlined in Sec are adopted, then users sh Guidance is based on ass necessary to define appro can be achieved using ons unsafe use (i.e., RCRs > 1 : Consumer use - Consu) e scenario: er end-use of air care produ	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.003 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000207 mg/kg dw 0.000207 mg/kg dw 0.00002093 mg/m3 0.000009802 mg/kg bw/day N/A osure estimate/DNEL); PEC=Pr hether he works inside the bour not expected to exceed the DN(N tion 2 are implemented. Where the nould ensure that risks are mana umed operating conditions which priate site-specific risk manager site/offsite technologies, either a 1), additional RMMs or a site-specific imer end-use of air care proce- ucts	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 edicted enviro ndaries set by <i>A</i>)EL when the other Risk Maraged to at least h may not be a ment measures lone or in com ecific chemical Jucts	Notes	hal ions be water f
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water sediment Soil STP Human via environment Human via environment Human via environment RCR=Risk characterizatio 4. Guidance to the Down Health: Environment: Exposure scenario (10) 1. Exposure scenario (10) Short title of the exposur Consumer use - Consum List of use descriptors:	ystemic, Oral ystemic, Combined routes ical, Inhalation , Inhalation , Oral , Combined routes on ratio (PEC/PNEC or Exp stream User to evaluate will Predicted exposures are in Conditions outlined in Sec are adopted, then users sh Guidance is based on ass necessary to define appro can be achieved using ons unsafe use (i.e., RCRs > 1 : Consumer use - Consu) re scenario: er end-use of air care produ	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.003 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000227 mg/kg dw 0.0002093 mg/m3 0.000009802 mg/kg bw/day N/A osure estimate/DNEL); PEC=Pr hether he works inside the bour not expected to exceed the DN(N tion 2 are implemented. Where nould ensure that risks are mana umed operating conditions whic priate site-specific risk manager site/offsite technologies, either a 1), additional RMMs or a site-specific mer end-use of air care proc	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029 <0.01 <0.01 <0.01 <0.01 <0.01 redicted enviro ndaries set by <i>A</i>)EL when the other Risk Mar aged to at least h may not be a ment measures lone or in com ecific chemical Jucts	Notes	hal ions be water f
Consumer, long-term, sy Consumer, long-term, sy Consumer, long-term, lo Environment Effect/Compartment Freshwater Freshwater sediment Marine water Marine water sediment Soil STP Human via environment Human via environment Human via environment RCR=Risk characterizatio 4. Guidance to the Down Health: Environment: Exposure scenario (10) 1. Exposure scenario (10) 1. Exposure scenario (10) Short title of the exposur Consumer use - Consum List of use descriptors: Product category (PC): P	ystemic, Oral ystemic, Combined routes ical, Inhalation , Inhalation , Inhalation , Oral , Combined routes on ratio (PEC/PNEC or Exp stream User to evaluate wi Predicted exposures are n Conditions outlined in Sec are adopted, then users sh Guidance is based on ass necessary to define appro can be achieved using ons unsafe use (i.e., RCRs > 1 : Consumer use - Consu) re scenario: er end-use of air care produ C3 toggory (ERC): ERC22	0 mg/kg bw/day N/A 0.809 mg/m3 Exposure estimate/PEC 0.000123 mg/L 0.003 mg/kg dw 0.00001187 mg/L 0.0002822 mg/kg dw 0.000207 mg/kg dw 0.000207 mg/kg dw 0.00002093 mg/m3 0.000009802 mg/kg bw/day N/A osure estimate/DNEL); PEC=Pr hether he works inside the bour tot expected to exceed the DN(N tot expected to exceed to exceed the DN(N tot expected to exceed	<0.01 0.376 0.247 RCR 0.103 0.072 0.099 0.07 0.029 <0.01 <0.01 <0.01 <0.01 <0.01 <0.01 edicted enviro ndaries set by <i>A</i>)EL when the other Risk Mara aged to at least h may not be a ment measures lone or in com acific chemical fucts	Notes Notes Notes Notes	aal ions be water f

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:

Freshwater sediment

Generic exposure scenario: IFRA GES 7 (IU7).

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. Consumer application.

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			
General:			
For cosmetic and personal care products, risk asses	sment only required for the env	vironment under	REACH as human health is covered by
alternative legislation.			-
Product characteristics:			
Concentration of substance in mixture:			
- Air care products (aerosol): Up to 0.002 g/g.			
- Air care products, continous action (solid and liquid): Up to 0.05 g/g.		
Physical state: liquid.			
Amounts used:			
Applied amounts for each use event: 50 g.			
Frequency and duration of use/exposure:			
Duration covers exposure up to: 8 hours/event.			
Frequency - covers use frequency: up to 1 time/day	; 365 times/year.		
2.2 Control of environmental exposure			
Product characteristics:			
Physical state: liquid.			
Vapour pressure: <0.5 kPa.			
Amounts used:			
Daily wide dispersive use: 0.000066 tons/day.			
Percentage of tonnage used at regional scale: 10 %.			
Frequency and duration of use:			
Wide dispersive use.			
Environmental factors not influenced by risk manage	jement:		
Flow rate of receiving surface water: >=18000 m3/da	y (default).		
Other given operational conditions affecting environ	nmental exposure:		
Release fraction to air from process (initial release):	1,00; (final release): 1,00.		
Release fraction to wastewater from process (initial r	elease): 1.00; (final release): 1	.00. Local releas	e rate: 0.066 kg/day.
Release fraction to soil from process (final release):	0.0.		
Technical onsite conditions and measures to reduc	e or limit discharges, air emis	sions and releas	ses to soil:
Dry sludge application to agricultural soil: Yes (defau	llt).		
Conditions and measures related to municipal sewa	age treatment plant:		
Municipal Sewage Treatment Plant (STP): Yes (Efficience)	ciency=87.61%).		
Size of municipal sewage system/treatment plant: >=	2000 m3/day (standard town).		
Conditions and measures related to external treatment	nent of waste for disposal:		
External treatment and disposal of waste should com	ply with applicable local and/o	r national regula	tions.
Particular considerations on the waste treatment ope	erations: No (low risk) (ERC ba	sed assessment	demonstrating control of risk with default
conditions. Low risk assumed for waste life stage. W	aste disposal according to nati	onal/local legisla	ition is sufficient.)
Conditions and measures related to external recover	ery of waste:		
External recovery and recycling of waste should com	ply with applicable local and/o	r national regula	lions.
Additional good practice advice:			
All risk management measures utilised must also con	mply with all relevant local regu	Ilations.	
3. Exposure estimation and reference to its source			
Assessment method-Health: CHESAR V2.2 Consum	ner TRA v3.		
Assessment method-Environment: CHESAR V2.2 - I	EUSES v2 1		
Health	20020 12:11		
	Exposure estimate/BEC	DCD	Notos
Electrompartment	Exposure estimate/PEC	<u>RCR</u>	Notes
Consumer, long-term, systemic, Dermal	0 mg/kg bw/day	<0.01	
Consumer, long-term, systemic, Inhalation	2.155 mg/m3	0.659	
Consumer, long-term, systemic, Oral	0 mg/kg bw/day	<0.01	
Consumer, long-term, systemic. Combined routes	N/A	0.659	
Consumer long-term local Inhalation	2 155 mg/m3	0.650	
	2.135 Шулн5	0.058	
Effect/Compartment	Exposure estimate/PEC	<u>RCR</u>	<u>Notes</u>
Freshwater	0 000489 mg/l	0 408	

0.012 mg/kg dw

0.288

Effect/Compartment	Exposure estimate/PEC	<u>RCR</u>	<u>Notes</u>
Marine water	0.00004847 mg/L	0.404	
Marine water sediment	0.001 mg/kg dw	0.285	
Soil	0.002 mg/kg dw	0.258	
STP	0.004 mg/L	<0.01	
Human via environment, Inhalation	0.000002123 mg/m3	<0.01	
Human via environment, Oral	0.00003821 mg/kg bw/day	<0.01	
Human via environment, Combined routes	N/A	<0.01	
RCR=Risk characterization ratio (PEC/PNEC or Exp	osure estimate/DNEL); PEC=P	redicted envi	ronmental concentration.
4. Guidance to the Downstream User to evaluate whether the second s	nether he works inside the bou	ndaries set b	ov the ES
Health: Predicted exposures are n Conditions outlined in Sec	ot expected to exceed the DN(tion 2 are implemented. Where	M)EL when th other Risk M	he Risk Management Measures/Operational
are adopted, then users sh	ould ensure that risks are man	aged to at lea	ast equivalent levels.
Environment: Guidance is based on ass	umed operating conditions which	ch may not be	e applicable to all sites; thus, scaling may be
necessary to define appro	priate site-specific risk manage	ment measur	es. Required removal efficiency for wastewater
can be achieved using ons	site/offsite technologies, either	alone or in co	mbination. If scaling reveals a condition of
), additional Rivivis of a site-sp		al safety assessment is required.
Exposure scenario (11): Consumer use - Consult 1 Exposure scenario (11)	imer end-use of blocides (if	idoors)	
Consumer use - Consumer end-use of biocides (Inde	pors)		
List of use descriptors:			
Product category (PC): PC8			
Environmental release category (ERC): ERC8a			
Name of contributing environmental scenario and c	orresponding ERCs:		
ERC8a Widespread use of non-reactive processing a	aid (no inclusion into or onto art	icle, indoor).	
Further explanations:			
Generic exposure scenario: IFRA GES 8 (IU8).	al cara producto, porfumos ano	fragranaaa	Note: For ecomotic and personal care products
consumer uses e.g. as a carrier in cosmetics/person	dor REACH as human health i	ragrances.	alternative logislation
Consumer application	idel REACH as numan nealth i	s covered by	
Consumer application.	re and the European Chamical	Aganay (EC	(A) Cuidanas an information requirements and
chemical safety assessment. Chanter R 12: Use des	criptor system (http://quidance	Ayency (ECI	eu/docs/quidance_document/
information requirements r12 en pdf)	chptor bystern (http://guidanee.	cena.curopa.	ea/acco/guidance_accament
2. Conditions of use affecting exposure			
2.1 Control of consumer exposure			
General:			
For cosmetic and personal care products, risk assess	sment only required for the env	ironment und	er REACH as human health is covered by
alternative legislation.			
2.2 Control of environmental exposure			
Product characteristics:			
Physical state: liquid.			
Amounts used:			
Daily wide dispersive use: 0 00000275 tons/day			
Percentage of tonnage used at regional scale: 10 %.			
Frequency and duration of use:			
Wide dispersive use.			
Environmental factors not influenced by risk manag	ement:		
Flow rate of receiving surface water: >=18000 m3/da	y (default).		
Other given operational conditions affecting enviror	nmental exposure:		
Indoor use. Belages fraction to air from process (initial release):	1 00: (final ralazza): 1 00		
Release fraction to wastewater from process (initial release).	elease): 1 00: (final release): 1	00 Local rele	ease rate: 0.003 kg/day
Release fraction to soil from process (final release): ().0.	CO. LOCALION	
Technical onsite conditions and measures to reduc	e or limit discharges, air emiss	ions and rele	eases to soil:
Dry sludge application to agricultural soil: Yes (defau	lt).		
Conditions and measures related to municipal sewa	age treatment plant:		
Municipal Sewage Treatment Plant (STP): Yes (Effic	ciency=87.61%).		
Size of municipal sewage system/treatment plant: >=	2000 m3/day (standard town).		
Conditions and measures related to external treatm	ent of waste tor disposal:	notional ran	lations
External treatment and disposal of waste should com	rations: No (low risk) (EPC bor	national regi	uiduolis.
conditions. Low risk assumed for waste life stage. Wa	aste disposal according to natio	onal/local legi	slation is sufficient.)
Conditions and measures related to external recover	ery of waste:		
External recovery and recycling of waste should com	ply with applicable local and/or	national regu	ulations.
Additional good practice advice:		0	

All risk management measures utilised must also comply with all relevant local regulations.

3. Exposure estimation and reference to its source

Assessment method-Environment: CHESAR V2.2 - EUSES v2.1.

Assessment method-Envi	Ionment. Chesar v2.2 - E	USES V2.1.		
		Evenes estimate /DEC	DOD	Natao
Effect/Compartment		Exposure estimate/PEC	<u>RCR</u> 0.091	Notes
Freshwater		0.00009742 Mg/L	0.061	
Freshwater sediment		0.002 mg/kg dw	0.057	
Marine water		0.000009314 mg/L	0.078	
Marine water sediment		0.0002215 mg/kg dw	0.055	
Soil		0.00009345 mg/kg dw	0.013	
STP		0.0001703 mg/L	<0.01	
Human via environment,	Inhalation	0.000002091 mg/m3	<0.01	
Human via environment,	Oral	0.00000782 mg/kg bw/day	<0.01	
Human via environment,	Combined routes	N/A	<0.01	
RCR=Risk characterization	n ratio (PEC/PNEC or Expo	osure estimate/DNEL); PEC=Pre	edicted environm	ental concentration.
4. Guidance to the Downs	tream User to evaluate wh	ether he works inside the boun	daries set by the	ES
Environment:	Guidance is based on assu necessary to define approp can be achieved using ons unsafe use (i.e., RCRs > 1	umed operating conditions which priate site-specific risk managem ite/offsite technologies, either al), additional RMMs or a site-spe	n may not be app nent measures. F one or in combin cific chemical sa	licable to all sites; thus, scaling may be Required removal efficiency for wastewater ation. If scaling reveals a condition of fety assessment is required.
Exposure scenario (12):	Consumer use - Consu	mer end-use of biocides (Ou	itdoors)	
1. Exposure scenario (12))			
Short title of the exposure Consumer use - Consum	∍ scenario: er end-use of biocides (Out	doors)		
List of use descriptors: Product category (PC): PC Environmental release cat	28 tegory (ERC): ERC8a, ERC	8d		
Name of contributing env ERC8a Widespread use of ERC8d Widespread use of Eventse explanations	ironmental scenario and co f non-reactive processing a f non-reactive processing a	orresponding ERCs: id (no inclusion into or onto artic id (no inclusion into or onto artic	le, indoor). le, outdoor).	
Consumer uses e.g. as a risk assessment only requ Consumer application. Generic exposure scenari	carrier in cosmetics/persona lired for the environment un o: IFRA GES 8 (IU8).	al care products, perfumes and f der REACH as human health is	ragrances. Note covered by alter	: For cosmetic and personal care products, native legislation.
For further information on chemical safety assessme information requirements	standardized use descripto ent, Chapter R.12: Use desc r12 en.pdf).	rs see the European Chemical A criptor system (http://guidance.e	Agency (ECHA) (cha.europa.eu/d	Guidance on information requirements and ccs/guidance_document/
2. Conditions of use affec	ting exposure			
2.1 Control of consumer e	xposure			
General:				
For cosmetic and persona	I care products, risk assess	ment only required for the enviro	onment under RI	EACH as human health is covered by
alternative legislation.	tol ovnoguro			
2.2 Control of environmen				
Physical state: liquid.				
Vapour pressure: <0.5 kP	а.			
Amounts used:				
Daily wide dispersive use:	0,00000275 tons/day.			
Percentage of tonnage us	ed at regional scale: 10 %.			
Frequency and duration of	of use:			
Environmental factors no	t influenced by risk manage	ement:		
Flow rate of receiving surf	ace water: >=18000 m3/day	/ (default)		
Other given operational of	onditions affecting environ	mental exposure:		
Outdoor use. Release fraction to air from Release fraction to waster Release fraction to soil from	n process (initial release): 1 water from process (initial re	.00; (final release): 1.00. elease): 1.00; (final release): 1.0 20	0. Local release	rate: 0.003 kg/day.
Technical onsite condition	ns and measures to reduce	e or limit discharges, air emissio	ons and release	s to soil:
Dry sludge application to a	agricultural soll: Yes (defaul	t).		
Municipal Sewage Treatm	s related to municipal sewa	ige treatment plant:		
Size of municipal sewage	system/treatment nlant: >=	2000 m3/dav (standard town)		
	,			

Conditions and measures related to external treatment of waste for disposal: External treatment and disposal of waste should comply with applicable local and/or national regulations.

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.)

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:

Environment

All risk management measures utilised must also comply with all relevant local regulations.

3. Exposure estimation and reference to its source

Assessment method-Environment: CHESAR V2.2 - EUSES v2.1.

Effect/Compartment	Exposure estimate/PEC	<u>RCR</u>	<u>Notes</u>	
Freshwater	0.00009742 mg/L	0.081		
Freshwater sediment	0.002 mg/kg dw	0.057		
Marine water	0.000009314 mg/L	0.078		
Marine water sediment	0.0002215 mg/kg dw	0.055		
Soil	0.00009345 mg/kg dw	0.013		
STP	0.0001703 mg/L	<0.01		
Human via environment, Inhalation	0.000002091 mg/m3	<0.01		
Human via environment, Oral	0.00000782 mg/kg bw/day	<0.01		
Human via environment, Combined routes	N/A	<0.01		

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 Environment: Guidance is based on assumed operating conditions which may not be applicab

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 (13): Use by professional workers - Professional end-use of cosmetics

1. Exposure scenario (13)

Short title of the exposure scenario:

Use by professional workers - Professional 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:

Generic exposure scenario: IFRA GES 10 (IU10).

For cosmetic and personal care products, risk assessment only required for the environment under REACH as human health is covered by alternative legislation.

Professional application.

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:

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 exposure

General:

All risk management measures utilised must also comply with all relevant local regulations.

Product characteristics:

Physical state: liquid.

Vapour pressure: <0.5 kPa.

Amounts used:

Daily wide dispersive use: 0.000006875 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 environmental exposure:

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: 0.007 kg/day. Release fraction to soil from process (final release): 0.0.

Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Dry sludge application to agricultural soil: Yes (default).

Conditions and measures related to municipal sewage treatment plant:

Municipal Sewage Treatment Plant (STP): Yes (Efficiency=87.61%).

Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town).

Conditions and measures related to external treatment of waste for disposal:

External treatment and disposal of waste should comply with applicable local and/or national regulations.

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.)

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:

All risk management measures utilised must also comply with all relevant local regulations.

3. Exposure estimation and reference to its source

Assessment method-Environment: CHESAR V2.2 - EUSES v2.1.

Environment

Effect/Compartment	Exposure estimate/PEC	<u>RCR</u>	<u>Notes</u>	
Freshwater	0.000123 mg/L	0.103		
Freshwater sediment	0.003 mg/kg dw	0.072		
Marine water	0.00001187 mg/L	0.099		
Marine water sediment	0.0002822 mg/kg dw	0.07		
Soil	0.000207 mg/kg dw	0.029		
STP	0.0004258 mg/L	<0.01		
Human via environment, Inhalation	0.000002093 mg/m3	<0.01		
Human via environment, Oral	0.000009802 mg/kg bw/day	<0.01		
Human via environment, Combined routes	N/A	<0.01		

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

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 (14): Consumer use - Consumer end-use of cosmetics

1. Exposure scenario (14)

Short title of the exposure scenario:

Consumer use - Consumer end-use of cosmetics

List of use descriptors:

Environment:

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. Consumer application.

Generic exposure scenario: IFRA GES 10 (IU10).

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

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 exposure

Product characteristics:

Physical state: liquid.

Vapour pressure: <0.5 kPa.

Amounts used:

Daily wide dispersive use: 0.000006875 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 environmental exposure:

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: 0.007 kg/day.

STP

Environment:

Human via environment, Inhalation Human via environment. Oral

Human via environment, Combined routes

Release fraction to soil from process (final release): 0.0. Technical onsite conditions and measures to reduce or limit discharges, air emissions and releases to soil: Dry sludge application to agricultural soil: Yes (default). Conditions and measures related to municipal sewage treatment plant: Municipal Sewage Treatment Plant (STP): Yes (Efficiency=87.61%). Size of municipal sewage system/treatment plant: >=2000 m3/day (standard town). Conditions and measures related to external treatment of waste for disposal: External treatment and disposal of waste should comply with applicable local and/or national regulations. 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.) 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: All risk management measures utilised must also comply with all relevant local regulations. 3. Exposure estimation and reference to its source Assessment method-Environment: CHESAR V2.2 - EUSES v2.1. Environment Effect/Compartment **Exposure estimate/PEC** RCR Notes 0.000123 mg/L Freshwater 0.103 Freshwater sediment 0.003 mg/kg dw 0.072 0.00001187 mg/L 0.099 Marine water Marine water sediment 0.0002822 mg/kg dw 0.07 Soil 0.000207 mg/kg dw 0.029

< 0.01

< 0.01

<0.01

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.

0.0004258 mg/L

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

N/A

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

0.000002093 mg/m3

0.000009802 mg/kg bw/day