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

OXALIC ACID DIHYDRATE CRISTAUX OXAQUIM

Version 2.1 Print Date 10.05.2023

Revision date / valid from 16.02.2023

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

1.1. Product identifier

Trade name	:	OXALIC ACID DIHYDRATE CRISTAUX OXAQUIM
Substance name	:	oxalic acid dihydrate
Index-No.	:	607-006-00-8
CAS-No.	:	6153-56-6
EC-No.	:	205-634-3
EU REACH-Reg. No.	:	01-2119534576-33-xxxx

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

Use of the Substance/Mixture	:	Identified use: See table in front of appendix for a complete overview of identified uses.
Uses advised against	:	At this moment we have not identified any uses advised against
Remarks	:	Before referring to any Exposure Scenario attached to this Safety Data Sheet please check the grade of the product: the Exposure Scenarios presented are not related to all product grade

1.3. Details of the supplier of the safety data sheet

Company	:	BRENNTAG S.A. Avenue du Progrès 90 FR 69680 CHASSIEU
Telephone	:	+33(0)4.72.22.16.00
Telefax	:	+33(0)4.72.79.53.74
E-mail address	:	securite-produits@brenntag.fr
Responsible/issuing person	:	Direction HSE

1.4. Emergency telephone number

Emergency telephone number	:	Emergency phone number BRENNTAG SA Available 24h/7d 0800 07 42 28 from within France +33 800 07 42 28 international Poison Control Centers in France (Service ORFILA by the INRS) Available 24h/7d Information limited to intoxications 01 45 42 59 59 from within France

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008

REGULATION (EC) No 1272/2008			
Hazard class	**Hazard category**	**Target Organs**	**Hazard statements**
Acute toxicity (Dermal)	Category 4	---	H312
Acute toxicity (Oral)	Category 4	---	H302
Serious eye damage	Category 1	---	H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

Most important adverse effects

Human Health : See section 11 for toxicological information.

Physical and chemical hazards : See section 9/10 for physicochemical information.

Potential environmental effects : See section 12 for environmental information.

2.2. Label elements

Labelling according to Regulation (EC) No 1272/2008

Hazard symbols :

Signal word : Danger

Hazard statements : H302 + H312 Harmful if swallowed or in contact with skin.
H318 Causes serious eye damage.

Precautionary statements

Prevention : P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response : P302 + P352 + P312 IF ON SKIN: Wash with plenty of water. Call a POISON CENTER/doctor if

			you feel unwell.
		P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
Disposal	:	P501	Dispose of contents/ container to an approved waste disposal plant.

Hazardous components which must be listed on the label:

- oxalic acid dihydrate

2.3. Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information: No information available about endocrine disruption properties for environment.

Toxicological information: No information available about endocrine disruption properties for human health.

Combustible solids. Reacts violently with strong oxidants causing fire and explosion hazard.

SECTION 3: Composition/information on ingredients

3.1. Substances

Hazardous components	Amount [%]	Classification (REGULATION (EC) No 1272/2008)	
		Hazard class / Hazard category	Hazard statements
oxalic acid dihydrate			
Index-No. : 607-006-00-8 CAS-No. : 6153-56-6 EC-No. : 205-634-3 EU REACH-Reg. No. : 01-2119534576-33-xxxx	>= 98 - <= 100	Acute Tox.4 Dermal Acute Tox.4 Oral Eye Dam.1 Acute toxicity estimate Acute oral toxicity: 375 mg/kg Acute dermal toxicity: 1100 mg/kg	H312 H302 H318

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	: Take off all contaminated clothing immediately.
If inhaled	: Remove to fresh air. If symptoms persist, call a physician.
In case of skin contact	: After contact with skin, wash immediately with plenty of soap and water. If symptoms call a physician.
In case of eye contact	: Rinse immediately with plenty of water, also under the eyelids, for at least 10 minutes. Consult an eye specialist immediately. Go to an ophthalmic hospital if possible.
If swallowed	: Wash out mouth with water. Never give anything by mouth to an unconscious person. If a person vomits when lying on his back, place him in the recovery position. Call a physician immediately.
Protection of First Aid Responders	: First Aid responders should pay attention to self-protection and use the recommended protective clothing.

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

Symptoms	: See Section 11 for more detailed information on health effects and symptoms.
Effects	: See Section 11 for more detailed information on health effects and symptoms.

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

Treatment	: Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	:	Water spray, foam, dry powder or CO2.
Unsuitable extinguishing media	:	High volume water jet

5.2. Special hazards arising from the substance or mixture

Specific hazards during firefighting	:	Incomplete combustion may form toxic pyrolysis products.
Hazardous combustion products	:	Carbon monoxide, Carbon dioxide (CO2)

5.3. Advice for firefighters

Special protective equipment for firefighters	:	In the event of fire, wear self-contained breathing apparatus.Wear personal protective equipment.
Further advice	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions	:	Use personal protective equipment. Keep away unprotected persons. Ensure adequate ventilation. Avoid contact with skin and eyes. Do not breathe vapours or spray mist.

6.2. Environmental precautions

Environmental precautions	:	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.

6.3. Methods and materials for containment and cleaning up

Methods and materials for containment and cleaning up	:	Use mechanical handling equipment. Keep in suitable, closed containers for disposal.
Further information	:	Treat recovered material as described in the section "Disposal considerations".

6.4. Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on personal protective equipment.
See Section 13 for waste treatment information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling	:	Keep container tightly closed. Avoid creating dust. Ensure adequate ventilation. Use personal protective equipment. Avoid contact with skin, eyes and clothing. Emergency eye wash fountains and emergency showers should be available in the immediate vicinity.
Hygiene measures	:	Keep away from food, drink and animal feedingstuffs. Smoking, eating and drinking should be prohibited in the application area. Wash hands before breaks and at the end of workday. Take off all contaminated clothing immediately.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers	:	Store in original container.

Advice on protection against fire and explosion	:	Normal measures for preventive fire protection.
Further information on storage conditions	:	Keep tightly closed in a dry and cool place.
Advice on common storage	:	Keep away from food, drink and animal feedingstuffs. Incompatible with oxidizing agents.
Suitable packaging materials	:	Polyethylene

7.3. Specific end use(s)

Specific use(s)	:	Identified use: See table in front of appendix for a complete overview of identified uses.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Component:	oxalic acid dihydrate	CAS-No. 6153-56-6

Derived No Effect Level (DNEL)/Derived Minimal Effect Level (DMEL)

DNEL Workers, Long-term - systemic effects, Inhalation	:	4,03 mg/m3
DNEL Workers, Long-term - systemic effects, Skin contact	:	2,29 mg/kg
DNEL Consumers, Long-term - systemic effects, Skin contact	:	1,14 mg/kg
DNEL Consumers, Long-term - systemic effects, Ingestion	:	1,14 mg/kg

Predicted No Effect Concentration (PNEC)

Fresh water	:	0,16 mg/l
Intermittent releases	:	1,622 mg/l
Sewage treatment plant (STP)	:	1550 mg/l

Other Occupational Exposure Limit Values

EU. Indicative Occupational Exposure Limit Values in Directives 91/322/EEC, 2000/39/EC, 2006/15/EC, 2009/161/EU, 2017/164/EU, as amended, Time Weighted Average (TWA):
1 mg/m3
Indicative

France. Threshold Limit Values (VLEP) for Occupational Exposure to Chemicals in France, INRS ED 984, as amended, French Time Weighted Average (VME):
1 mg/m3
Regulatory indicative (VRI)

8.2. Exposure controls

Appropriate engineering controls

Refer to protective measures listed in sections 7 and 8.

Personal protective equipment

Respiratory protection

Advice	:	Required, if exposure limit is exceeded (e.g. OEL). Respiratory protection complying with EN 141. Particle filter:P2

Hand protection

Advice	:	Protective gloves complying with EN 374. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Protective gloves should be replaced at first signs of wear.
Material	:	Nitrile rubber
Break through time	:	> 480 min
Glove thickness	:	0,11 mm

Material	:	Natural Rubber
Break through time	:	> 8 h
Glove thickness	:	0,5 mm

Material	:	polychloroprene
Break through time	:	> 8 h
Glove thickness	:	0,5 mm

Material	:	butyl-rubber
Break through time	:	> 8 h
Glove thickness	:	0,5 mm

Material	:	Fluorinated rubber
Break through time	:	> 8 h
Glove thickness	:	0,4 mm

Material	:	Polyvinylchloride
Break through time	:	> 8 h
Glove thickness	:	0,5 mm

Eye protection

Advice : Safety goggles

Skin and body protection

Advice : Wear personal protective equipment.

Environmental exposure controls

General advice : Do not flush into surface water or sanitary sewer system.
Avoid subsoil penetration.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	:	crystalline
Physical state	:	solid
Colour	:	colourless to white
Odour	:	odourless
Odour Threshold	:	No data available
Melting point/range	:	ca. 102 °C
Boiling point/boiling range	:	149 - 160 °C
Flammability (solid, gas)	:	The product is flammable but not readily ignited.
Upper explosion limit / Upper flammability limit	:	Not applicable
Lower explosion limit / Lower flammability limit	:	Not applicable
Flash point	:	Not applicable

Auto-ignition temperature	:	No data available
Decomposition temperature	:	> 160 °C
Self-Accelerating decomposition temperature (SADT)	:	No data available
pH	:	0,7 Concentration: 50 g/l 1 (20 °C) Concentration: 10 g/l
Viscosity		
Viscosity, dynamic	:	No data available
Viscosity, kinematic	:	No data available
Flow time	:	No data available
Solubility(ies)		
Water solubility	:	108 g/l (25 °C) soluble
Solubility in other solvents	:	No data available
Dissolution Rate	:	No data available
Partition coefficient: n-octanol/water	:	log Pow: -1,7 (23 °C) Method: OECD Test Guideline 107
Dispersion Stability	:	No data available
Vapour pressure	:	1 hPa (25 °C) 22 hPa (50 °C)
Relative density	:	0,81
Density	:	0,813 g/cm3
Bulk density	:	No data available
Relative vapour density	:	No data available

Particle characteristics
No data available

9.2 Other information

Explosives	:	Not applicable
Oxidizing properties	:	Not applicable
Evaporation rate	:	Not applicable

Molecular weight : ca. 126,07 g/mol

SECTION 10: Stability and reactivity

10.1. Reactivity

Advice : Reacts violently with oxidizing agents.

10.2. Chemical stability

Advice : Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions

Hazardous reactions : Risk of explosion. May cause fire.

10.4. Conditions to avoid

Conditions to avoid : Avoid high temperatures.
Thermal decomposition : > 160 °C

10.5. Incompatible materials

Materials to avoid : Oxidizing agents, Alkali metals, Mercury, furfuryl alcohol, Silver

10.6. Hazardous decomposition products

Hazardous decomposition products : Carbon monoxide, Carbon dioxide (CO2), Formic acid

SECTION 11: Toxicological information

11.1. Information on the hazard classes within the meaning of Regulation (EC) No. 1272/2008

Component:	oxalic acid dihydrate	CAS-No. 6153-56-6
Acute toxicity		
Oral		
LD50	: 375 mg/kg (Rat, female) (No guideline followed)	
Inhalation		
Study scientifically not justified.		
Dermal		
Harmful in contact with skin.		

Irritation

Skin

Result	:	No skin irritation (Rabbit; 4 h) (OECD Test Guideline 404)

Eyes

Result	:	Risk of serious damage to eyes. (Rabbit) (OECD Test Guideline 405)

Sensitisation

Result	:	not sensitizing (Local lymph node test; Dermal; Mouse) (OECD Test Guideline 429)

CMR effects

CMR Properties

Carcinogenicity	:	It is not considered carcinogenic.
Mutagenicity	:	In vitro tests did not show mutagenic effects
Reproductive toxicity	:	Animal testing did not show any effects on fertility.

Genotoxicity in vitro

Result	:	negative (Bacterial Reverse Mutation Test; Salmonella typhimurium; with and without metabolic activation) (OECD Test Guideline 471) negative (Chromosome aberration test in vitro; Chinese hamster fibroblasts; no) (OECD Test Guideline 473) negative (In vitro gene mutation study in mammalian cells; Chinese hamster fibroblasts; with and without metabolic activation) (OECD Test Guideline 476)

Reproductive toxicity

NOAEL F1	:	<= 1.000 ppm
NOAEL Fertility	:	<= 0,1 % (Two-generation reproductive toxicity; Mouse, male and female)(Oral)(OECD Test Guideline 416)Animal testing did not show any effects on fertility.

Specific Target Organ Toxicity

Single exposure

Remarks	:	The substance or mixture is not classified as specific target organ toxicant, single exposure.

Repeated exposure

Remarks	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Other toxic properties

Repeated dose toxicity

LOAEL	:	150 mg/kg (Rat)(Oral) (OECD Test Guideline 407)

Aspiration hazard

Not applicable,

11.2. Information on other hazards

Data for the product

Endocrine disrupting properties

Assessment	:	No information available about endocrine disruption properties for human health.

Component: oxalic acid dihydrate CAS-No. 6153-56-6

Endocrine disrupting properties

Assessment	:	No information available about endocrine disruption properties for human health.

SECTION 12: Ecological information

12.1. Toxicity

Component: oxalic acid dihydrate CAS-No. 6153-56-6

Acute toxicity

Fish

LC50	:	160 mg/l (Carassius auratus (goldfish); 48 h)

Toxicity to daphnia and other aquatic invertebrates

EC50	:	162,2 mg/l (Daphnia magna (Water flea); 48 h) (OECD Test Guideline 202)

algae		
EC50	:	20,58 mg/l (Pseudokirchneriella subcapitata (green algae); 72 h) (static test; End point: Growth rate; OECD Test Guideline 201)

12.2. Persistence and degradability

Component:	**oxalic acid dihydrate**	**CAS-No. 6153-56-6**
Persistence and degradability		
Persistence		
Result	:	No data available
Biodegradability		
Result	:	89 % (aerobic; domestic sewage; Exposure Time: 20 d)(Directive 67/548/EEC, Annex V, C.5)Readily biodegradable.

12.3. Bioaccumulative potential

Component:	**oxalic acid dihydrate**	**CAS-No. 6153-56-6**
Bioaccumulation		
Result	:	log Kow -1,7 (23 °C; pH < 2) (OECD Test Guideline 107)
	:	Bioaccumulation is not expected.

12.4. Mobility in soil

Component:	**oxalic acid dihydrate**	**CAS-No. 6153-56-6**
Mobility		
Water	:	Good soluble in water.
Air	:	not volatile
Soil	:	Moderately mobile in soils

12.5. Results of PBT and vPvB assessment

Data for the product
Results of PBT and vPvB assessment

Result	:	
Result	:	This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Component:	oxalic acid dihydrate	CAS-No. 6153-56-6

Results of PBT and vPvB assessment

Result	:	This substance is not considered to be persistent, bioaccumulating nor toxic (PBT)., This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6. Endocrine disrupting properties

Data for the product

Endocrine disrupting potential	:	No information available about endocrine disruption properties for environment.

Component:	oxalic acid dihydrate	CAS-No. 6153-56-6

Endocrine disrupting potential	:	No information available about endocrine disruption properties for environment.

12.7. Other adverse effects

Component:	oxalic acid dihydrate	CAS-No. 6153-56-6

Biochemical Oxygen Demand (BOD)

Result	:	ca. 160 mg/g

Chemical Oxygen Demand (COD)

Result	:	ca. 180 mg/g

Additional ecological information

Result	:	Do not flush into surface water or sanitary sewer system. Avoid subsoil penetration.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Product	:	Disposal together with normal waste is not allowed. Special disposal required according to local regulations. Do not let product enter drains. Contact waste disposal services. This product shall be disposed of or recovered in compliance with Directive 2008/98/EC on waste as lastly amended.

Contaminated packaging	:	Empty contaminated packagings thoroughly. They can be recycled after thorough and proper cleaning. If recycling is not practicable, dispose of in compliance with local regulations.
European Waste Catalogue Number	:	No waste code according to the European Waste Catalogue can be assigned for this product, as the intended use dictates the assignment. The waste code is established in consultation with the regional waste disposer.

SECTION 14: Transport information

Not dangerous goods for ADR, RID, IMDG and IATA.

14.1. UN number or ID number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

Not applicable.

14.4. Packaging group

Not applicable.

14.5. Environmental hazards

Not applicable.

14.6. Special precautions for user

Not applicable.

14.7 Maritime transport in bulk according to IMO instruments

Not applicable for product as supplied.

SECTION 15: Regulatory information

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

Data for the product

Nomenclature of classified installations (ICPE) - Directive	:	NC Not classified

Seveso III

Component:	oxalic acid dihydrate	CAS-No. 6153-56-6

EU. Chemicals Subject to PIC Procedure: Regulation 649/2012/EU on export and import of dangerous chemicals, as amended	:	; The substance/mixture does not fall under this legislation.
EU. REACH, Annex XVII, Marketing and Use Restrictions (Regulation 1907/2006/EC)	:	Point Nos.: , 75; Listed
EU. Regulation No 1451/2007 [Biocides], Annex I, OJ (L 325)	:	EC Number: , 205-634-3; Listed
EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I	:	; The substance/mixture does not fall under this legislation.

Notification status
oxalic acid dihydrate:

Regulatory List	Notification	Notification number
TCSI	YES	
TH INV	YES	2917.11
TH INV	YES	55-1-04841
VN INVL	YES	

15.2. Chemical safety assessment

A Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H302	Harmful if swallowed.

H312	Harmful in contact with skin.
H318	Causes serious eye damage.

Full text of the Notes referred to under section 3.

Abbreviations and Acronyms

AU AIICL	Australia. Industrial Chemicals Act (AIIC) List
BCF	bioconcentration factor
BOD	biochemical oxygen demand
CAS	Chemical Abstracts Service
CLP	Classification, Labelling and Packaging
CMR	carcinogenic, mutagenic or toxic to reproduction
COD	chemical oxygen demand
DNEL	derived no-effect level
DSL	Canada. Environmental Protection Act, Domestic Substances List
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
ENCS (JP)	Japan. Kashin-Hou Law List
GHS	Globally Harmonized System of Classification and Labelling of Chemicals
IECSC	China. Inventory of Existing Chemical Substances
INSQ	Mexico. National Inventory of Chemical Substances
ISHL (JP)	Japan. Inventory of Industrial Safety & Health
KECI (KR)	Korea. Existing Chemicals Inventory
LC50	median lethal concentration
LOAEC	lowest observed adverse effect concentration
LOAEL	lowest observed adverse effect level
LOEL	lowest observed effect level
NDSL	Canada. Environmental Protection Act. Non-Domestic Substances List
NLP	no-longer polymer
NOAEC	no observed adverse effect concentration
NOAEL	no observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
NZIOC	New Zealand. Inventory of Chemicals
OECD	Organisation for Economic Cooperation and Development
OEL	occupational exposure limit
ONT INV	Canada. Ontario Inventory List
PBT	persistent, bioaccumulative and toxic
PHARM (JP)	Japan. Pharmacopoeia Listing

PICCS (PH)	Philippines. Inventory of Chemicals and Chemical Substances
PNEC	predicted no-effect concentration
REACH Auth. No.:	REACH Authorisation Number
REACH AuthAppC. No.	REACH Authorisation Application Consultation Number
STOT	specific target organ toxicity
SVHC	substance of very high concern
TCSI	Taiwan. Existing Chemicals Inventory
TH INV	Thailand. Existing Chemicals Inventory from FDA
TSCA	US. Toxic Substances Control Act
UVCB	substance of unknown or variable composition, complex reaction products or biological materials
VN INVL	Vietnam. National Chemical Inventory
vPvB	very persistent and very bioaccumulative

Further information

Key literature references and sources for data	:	Supplier information and data from the "Database of registered substances" of the European Chemicals Agency (ECHA) were used to create this safety data sheet.
Methods used for product classification	:	The classification for human health, physical and chemical hazards and environmental hazards were derived from a combination of calculation methods and if available test data.
Hints for trainings	:	The workers have to be trained regularly on the safe handling of the products based on the information provided in the Safety Data Sheet and the local conditions of the workplace. National regulations for the training of workers in the handling of hazardous materials must be adhered to.
Other information	:	The information provided in this Safety Data Sheet is correct to our knowledge at the date of its revision. The information given only describes the products with regard to safety arrangements and is not to be considered as a warranty or quality specification and does not constitute a legal relationship. The information contained in this Safety Data Sheet relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

|| Indicates updated section.

No.	Short title	REACH Auth. No.:/ REACH AuthApC. No.	Main User Group (SU)	Sector of Use (SU)	Product Category (PC)	Process Category (PROC)	Environmental Release Category (ERC)	Article Category (AC)	Specified
1	Formulation & (re)packing of substances and mixtures	NA	3	NA	9a, 14, 15, 21, 23, 29, 34, 35, 36, 37	3, 4, 5, 8b, 9, 15	2	NA	ES2423
2	Manufacture of substance	NA	3	NA	NA	2, 3, 4, 8b	1	NA	ES2421
3	Professional use	NA	22	NA	NA	10, 15, 21	8a, 8b, 8c, 8d, 8e, 8f	NA	ES2427
4	Industrial use	NA	3	5, 6a, 6b, 8, 9, 12, 13, 14, 16, 17, 18, 19, 20, 23	7, 9a, 9b, 14, 15, 20, 21, 23, 29, 32, 33, 34, 35, 36, 37	1, 2, 3, 4, 5, 7, 8a, 8b, 9, 10, 13, 14, 15, 21, 22	4, 5, 6a, 6b, 6c, 6d, 7	NA	ES2425
5	Consumer use	NA	21	NA	9a, 31, 35	NA	8a, 8b, 8c, 8d, 8e, 8f	NA	ES2437

1. Short title of Exposure Scenario 1: Formulation & (re)packing of substances and mixtures		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Chemical product category	PC9a: Coatings and paints, thinners, paint removers PC14: Metal surface treatment products, including galvanic and electroplating products PC15: Non-metal-surface treatment products PC21: Laboratory chemicals PC23: Leather treatment products PC29: Pharmaceuticals PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids PC35: Washing and cleaning products PC36: Water softeners PC37: Water treatment chemicals	
Process categories	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC15: Use as laboratory reagent	
Environmental Release Categories	ERC2: Formulation of preparations	
Activity	Note: this Exposure Scenario is only relevant for an appropriated use according to the quality grade of the substance delivered	
2.1 Contributing scenario controlling environmental exposure for: ERC2		
Amount used	Daily amount per site	25 ton(s)/day
	Annual amount per site	7500 ton(s)/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	2,5 kg/day
	Emission or Release Factor: Water	125 kg/day
	Emission or Release Factor: Soil	2,5 kg/day
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
2.2 Contributing scenario controlling worker exposure for: PROC3, PROC4, PROC5, PROC8b, PROC9, PROC15		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.

	Physical Form (at time of use)	Solid, medium dustiness
Frequency and duration of use	Frequency of use	6 hours/day(PROC3, PROC4, PROC5)
	Frequency of use	4 hours/day(PROC8b, PROC9)
	Frequency of use	1 hours/day(PROC15)
Other operational conditions affecting workers exposure	Indoor use	
	Processing temperature:	25 °C
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (1 to 3 air changes per hour)(PROC3, PROC15)	
	Provide local exhaust ventilation (LEV). (Efficiency: 90 %)(PROC4, PROC5, PROC9)	
	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC8b)	
Organisational measures to prevent /limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OC's followed Ensure control measures are regularly inspected and maintained.	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.(PROC3, PROC15)	
	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.(PROC4, PROC5, PROC9)	
	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.(PROC8b)	

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC2	---	Fresh water	---	0,064mg/l	0,397
ERC2	---	Marine water	---	0,00634mg/l	0,397
ERC2	---	Sewage treatment plant (STP)	---	0,625mg/l	< 0,01

EUSES.

Workers

PROC3, PROC4, PROC5, PROC8b, PROC9, PROC15: ECETOC TRA worker v3

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC3	---	Worker - inhalative, long-term	1mg/m³	0,322
PROC3	---	Worker - dermal, long-term - systemic	0,069mg/kg/day	0,078
PROC4	---	Worker - inhalative, long-term	0,5mg/m³	0,161
PROC4	---	Worker - dermal, long-term - systemic	0,343mg/kg/day	0,389
PROC5	---	Worker - inhalative, long-term	0,35mg/m³	0,113
PROC5	---	Worker - dermal, long-term - systemic	0,685mg/kg/day	0,777
PROC8b	---	Worker - inhalative, long-term	0,42mg/m³	0,135

PROC8b	---	Worker - dermal, long-term - systemic	0,685mg/kg/day	0,777
PROC9	---	Worker - inhalative, long-term	0,3mg/m³	0,096
PROC9	---	Worker - dermal, long-term - systemic	0,343mg/kg/day	0,389
PROC15	---	Worker - inhalative, long-term	0,1mg/m³	0,032
PROC15	---	Worker - dermal, long-term - systemic	0,034mg/kg/day	0,039

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

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.
Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
For further information on the assessment method, see: http://www.ecetoc.org/tra
Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

1. Short title of Exposure Scenario 2: Manufacture of substance		
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites	
Process categories	PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities	
Environmental Release Categories	ERC1: Manufacture of substances	
Activity	Note: this Exposure Scenario is only relevant for an appropriated use according to the quality grade of the substance delivered	
2.1 Contributing scenario controlling environmental exposure for: ERC1		
Amount used	Daily amount per site	60 ton(s)/day
	Annual amount per site	15000 ton(s)/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	6 kg/day
	Emission or Release Factor: Water	300 kg/day
	Emission or Release Factor: Soil	6 kg/day
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
2.2 Contributing scenario controlling worker exposure for: PROC2, PROC3, PROC4, PROC8b		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	Solid, medium dustiness
Frequency and duration of use	Frequency of use	8 hours/day(PROC2, PROC3, PROC4)
	Frequency of use	4 hours/day(PROC8b)
Other operational conditions affecting workers exposure	Indoor use	
	Processing temperature:	25 °C
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).	
	Provide a good standard of controlled ventilation (1 to 3 air changes per hour)(PROC2, PROC8b)	
	Provide local exhaust ventilation (LEV). (Efficiency: 90 %)(PROC4)	
Organisational measures to prevent /limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OC's followed Ensure control measures are regularly inspected and maintained.	
Conditions and measures related	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'	

to personal protection, hygiene and health evaluation	employee training.(PROC2, PROC3, PROC4)
	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.(PROC8b)

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC1	---	Fresh water	---	0,151mg/l	0,944
ERC1	---	Marine water	---	0,015mg/l	0,943
ERC1	---	Sewage treatment plant (STP)	---	1,5mg/l	< 0,01

EUSES.

Workers

PROC2, PROC3, PROC4, PROC8b: ECETOC TRA worker v3

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC2	---	Worker - inhalative, long-term - systemic	0,5mg/m³	0,161
PROC2	---	Worker - dermal, long-term - systemic	0,137mg/kg/day	0,155
PROC3	---	Worker - inhalative, long-term	1mg/m³	0,322
PROC3	---	Worker - dermal, long-term - systemic	0,069mg/kg/day	0,078
PROC4	---	Worker - inhalative, long-term	0,35mg/m³	0,113
PROC4	---	Worker - dermal, long-term - systemic	0,686mg/kg/day	0,778
PROC8b	---	Worker - inhalative, long-term	0,6mg/m³	0,193
PROC8b	---	Worker - dermal, long-term - systemic	0,685mg/kg/day	0,777

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

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.
Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
For further information on the assessment method, see: http://www.ecetoc.org/tra
Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

1. Short title of Exposure Scenario 3: Professional use		
Main User Groups	SU 22: Professional uses: Public domain (administration, education, entertainment, services, craftsmen)	
Process categories	PROC10: Roller application or brushing PROC15: Use as laboratory reagent PROC21: Low energy manipulation of substances bound in materials and/ or articles	
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix	
2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8c, ERC8d, ERC8e, ERC8f		
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Water	100 kg/day
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.
2.2 Contributing scenario controlling worker exposure for: PROC10		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.
	Physical Form (at time of use)	Solid, low dustiness
Frequency and duration of use	Frequency of use	4 hours/day
Other operational conditions affecting workers exposure	Indoor use	
	Processing temperature:	25 °C
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (1 to 3 air changes per hour)	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.	
2.3 Contributing scenario controlling worker exposure for: PROC15, PROC21		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.
	Physical Form (at time of use)	Solid, medium dustiness
Frequency and duration of use	Frequency of use	2 hours/day(PROC15)
	Frequency of use	4 hours/day(PROC21)
Other operational conditions affecting workers exposure	Indoor use	
	Processing temperature:	25 °C
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (1 to 3 air changes per hour)	
Conditions and measures related	Wear chemically resistant gloves (tested to EN374) in combination with 'basic'	

to personal protection, hygiene and health evaluation	employee training.

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
---	---	Fresh water	---	0,051mg/l	0,319
---	---	Marine water	---	0,00509mg/l	0,318
---	---	Sewage treatment plant (STP)	---	0,5mg/l	< 0,01

EUSES.

Workers

PROC10, PROC15, PROC21: ECETOC TRA worker v3

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC10	---	Worker - inhalative, long-term - systemic	0,18mg/m³	0,058
PROC10	---	Worker - dermal, long-term - systemic	0,988mg/kg/day	1,12
PROC15	---	Worker - inhalative, long-term - systemic	0,18mg/m³	0,058
PROC15	---	Worker - dermal, long-term - systemic	0,02mg/kg/day	0,023
PROC21	---	Worker - inhalative, long-term	1,8mg/m³	0,579
PROC21	---	Worker - dermal, long-term - systemic	0,17mg/kg/day	0,193

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

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.
Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
For further information on the assessment method, see: http://www.ecetoc.org/tra
Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

1. Short title of Exposure Scenario 4: Industrial use	
Main User Groups	SU 3: Industrial uses: Uses of substances as such or in preparations at industrial sites
Sectors of end-use	SU5: Manufacture of textiles, leather, fur SU6a: Manufacture of wood and wood products SU6b: Manufacture of pulp, paper and paper products SU8: Manufacture of bulk, large scale chemicals (including petroleum products) SU9: Manufacture of fine chemicals SU12: Manufacture of plastics products, including compounding and conversion SU13: Manufacture of other non-metallic mineral products, e.g. plasters, cement SU14: Manufacture of basic metals, including alloys SU16: Manufacture of computer, electronic and optical products, electrical equipment SU17: General manufacturing, e.g. machinery, equipment, vehicles, other transport equipment SU18: Manufacture of furniture SU19: Building and construction work SU20: Health services SU23: Recycling
Chemical product category	PC7: Base metals and alloys PC9a: Coatings and paints, thinners, paint removers PC9b: Fillers, putties, plasters, modelling clay PC14: Metal surface treatment products, including galvanic and electroplating products PC15: Non-metal-surface treatment products PC20: Products such as pH-regulators, flocculants, precipitants, neutralization agents PC21: Laboratory chemicals PC23: Leather treatment products PC29: Pharmaceuticals PC32: Polymer preparations and compounds PC33: Semiconductors PC34: Textile dyes, finishing and impregnating products; including bleaches and other processing aids PC35: Washing and cleaning products PC36: Water softeners PC37: Water treatment chemicals
Process categories	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2: Use in closed, continuous process with occasional controlled exposure PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC4: Use in batch and other process (synthesis) where opportunity for exposure arises PROC5: Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant contact) PROC7: Industrial spraying PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-dedicated facilities PROC8b: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at dedicated facilities PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing) PROC10: Roller application or brushing PROC13: Treatment of articles by dipping and pouring PROC14: Production of preparations or articles by tabletting, compression, extrusion, pelletisation PROC15: Use as laboratory reagent

	PROC21: Low energy manipulation of substances bound in materials and/ or articles PROC22: Manufacturing and processing of minerals and/or metals at substantially elevated temperature	
Environmental Release Categories	ERC4: Industrial use of processing aids in processes and products, not becoming part of articles ERC5: Industrial use resulting in inclusion into or onto a matrix ERC6a: Industrial use resulting in manufacture of another substance (use of intermediates) ERC6b: Industrial use of reactive processing aids ERC6c: Industrial use of monomers for manufacture of thermoplastics ERC6d: Industrial use of process regulators for polymerisation processes in production of resins, rubbers, polymers ERC7: Industrial use of substances in closed systems	
2.1 Contributing scenario controlling environmental exposure for: ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC6d, ERC7		
Amount used	Daily amount per site	1 ton(s)/day
	Annual amount per site	250 ton(s)/year
Environment factors not influenced by risk management	Flow rate of receiving surface water	18.000 m3/d
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Air	0,1 kg/day (ERC4)
	Emission or Release Factor: Water	10 kg/day (ERC4)
	Emission or Release Factor: Soil	50 kg/day (ERC4)
	Emission or Release Factor: Air	0,1 kg/day (ERC5)
	Emission or Release Factor: Water	10 kg/day (ERC5)
	Emission or Release Factor: Soil	10 kg/day (ERC5)
	Emission or Release Factor: Air	0,1 kg/day (ERC6a)
	Emission or Release Factor: Water	10 kg/day (ERC6a)
	Emission or Release Factor: Soil	1 kg/day (ERC6a)
	Emission or Release Factor: Air	1 kg/day (ERC6b)
	Emission or Release Factor: Water	10 kg/day (ERC6b)
	Emission or Release Factor: Soil	0,25 kg/day (ERC6b)
	Emission or Release Factor: Air	1 kg/day (ERC6c)
	Emission or Release Factor: Water	10 kg/day (ERC6c)
	Emission or Release Factor: Soil	0 kg/day (ERC6c)
	Emission or Release Factor: Air	1 kg/day (ERC6d)
	Emission or Release	0,05 kg/day (ERC6d)

	Factor: Water	
	Emission or Release Factor: Soil	0,25 kg/day (ERC6d)
	Emission or Release Factor: Air	1 kg/day (ERC7)
	Emission or Release Factor: Water	10 kg/day (ERC7)
	Emission or Release Factor: Soil	50 kg/day (ERC7)
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
	Flow rate of sewage treatment plant effluent	2.000 m3/d
2.2 Contributing scenario controlling worker exposure for: PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC14, PROC15, PROC21, PROC22		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 100 %.
	Physical Form (at time of use)	Solid, medium dustiness
Frequency and duration of use	Frequency of use	6 hours/day(PROC1, PROC2, PROC3, PROC4, PROC14, PROC21, PROC22)
	Frequency of use	4 hours/day(PROC8a, PROC8b, PROC9)
	Frequency of use	1 hours/day(PROC15)
Other operational conditions affecting workers exposure	Indoor use	
	Processing temperature:	25 °C(PROC1, PROC2, PROC3, PROC4, PROC8a, PROC8b, PROC9, PROC15, PROC21)
	Processing temperature:	40 °C(PROC14, PROC22)
Technical conditions and measures to control dispersion from source towards the worker	Provide a good standard of controlled ventilation (1 to 3 air changes per hour)(PROC1, PROC2, PROC3, PROC14, PROC15, PROC22)	
	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC8b, PROC21)	
	Provide local exhaust ventilation (LEV). (Efficiency: 90 %)(PROC4, PROC8a, PROC9)	
Organisational measures to prevent /limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OC's followed Ensure control measures are regularly inspected and maintained.	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.(PROC1, PROC2, PROC3, PROC4, PROC9, PROC14, PROC15, PROC21, PROC22)	
	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.(PROC8a, PROC8b)	
2.3 Contributing scenario controlling worker exposure for: PROC5		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers percentage substance in the product up to 25 %.
	Physical Form (at time of use)	Solid, medium dustiness
Frequency and duration of use	Frequency of use	4 hours/day
Other operational conditions affecting workers exposure	Indoor use	
	Processing temperature:	25 °C
Technical conditions and measures to control dispersion	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).	

from source towards the worker		
Organisational measures to prevent /limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OC's followed Ensure control measures are regularly inspected and maintained.	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.	
2.4 Contributing scenario controlling worker exposure for: PROC7, PROC10, PROC13		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers the percentage of the substance in the product up to 100 % (unless stated differently).
	Physical Form (at time of use)	Solid, low dustiness
Frequency and duration of use	Frequency of use	4 hours/day(PROC7, PROC10)
	Frequency of use	6 hours/day(PROC13)
Other operational conditions affecting workers exposure	Indoor use	
	Processing temperature:	25 °C(PROC7, PROC10)
	Processing temperature:	40 °C(PROC13)
Technical conditions and measures to control dispersion from source towards the worker	Limit the substance content in the product to 25 %. Provide local exhaust ventilation (LEV). (Efficiency: 90 %)(PROC7)	
	Provide local exhaust ventilation (LEV). (Efficiency: 90 %)(PROC10)	
	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).(PROC13)	
Organisational measures to prevent /limit releases, dispersion and exposure	Supervision in place to check that the RMMs in place are being used correctly and OC's followed Ensure control measures are regularly inspected and maintained.	
Conditions and measures related to personal protection, hygiene and health evaluation	Wear respiratory protection. Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.(PROC7)	
	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.(PROC10)	
	Wear chemically resistant gloves (tested to EN374) in combination with specific activity training.(PROC13)	

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC7	---	Fresh water	---	0,00602mg/l	0,038
ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC7	---	Marine water	---	0,000594mg/l	0,037
ERC4, ERC5, ERC6a, ERC6b, ERC6c, ERC7	---	Sewage treatment plant (STP)	---	0,05mg/l	< 0,01
ERC6d	---	Fresh water	---	0,00105mg/l	< 0,01
ERC6d	---	Marine water	---	0,0000968mg/l	< 0,01
ERC6d	---	Sewage treatment plant (STP)	---	0,00025mg/l	< 0,01

EUSES.

Workers

PROC1, PROC2, PROC3, PROC4, PROC5, PROC7, PROC8a, PROC8b, PROC9, PROC10, PROC13, PROC14, PROC15, PROC21, PROC22: ECETOC TRA worker v3

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PROC1	---	Worker - inhalative, long-term - systemic	0,006mg/m³	< 0,01
PROC1	---	Worker - dermal, long-term - systemic	0,00204mg/kg/day	< 0,01
PROC2	---	Worker - inhalative, long-term	0,5mg/m³	0,161
PROC2	---	Worker - dermal, long-term - systemic	0,137mg/kg/day	0,155
PROC3	---	Worker - inhalative, long-term	1mg/m³	0,322
PROC3	---	Worker - dermal, long-term - systemic	0,069mg/kg/day	0,078
PROC4	---	Worker - inhalative, long-term	0,5mg/m³	0,161
PROC4	---	Worker - dermal, long-term - systemic	0,686mg/kg/day	0,778
PROC8a	---	Worker - inhalative, long-term	0,21mg/m³	0,068
PROC8a	---	Worker - dermal, long-term - systemic	0,685mg/kg/day	0,777
PROC8b	---	Worker - inhalative, long-term	0,42mg/m³	0,135
PROC8b	---	Worker - dermal, long-term - systemic	0,685mg/kg/day	0,777
PROC9	---	Worker - inhalative, long-term	0,21mg/m³	0,068
PROC9	---	Worker - dermal, long-term - systemic	0,686mg/kg/day	0,778
PROC14	---	Worker - inhalative, long-term	1mg/m³	0,322
PROC14	---	Worker - dermal, long-term - systemic	0,343mg/kg/day	0,389
PROC15	---	Worker - inhalative, long-term	0,1mg/m³	0,032
PROC15	---	Worker - dermal, long-term - systemic	0,034mg/kg/day	0,039
PROC21	---	Worker - inhalative, long-term	2,1mg/m³	0,675
PROC21	---	Worker - dermal, long-term - systemic	0,283mg/kg/day	0,321
PROC22	---	Worker - inhalative, long-term	1mg/m³	0,322
PROC22	---	Worker - dermal, long-term - systemic	0,283mg/kg/day	0,321
PROC5	---	Worker - inhalative, long-term - systemic	1,26mg/m³	0,405

PROC5	---	Worker - dermal, long-term - systemic	0,411mg/kg/day	0,466
PROC7	---	Worker - inhalative, long-term - systemic	0,00063mg/m³	< 0,01
PROC7	---	Worker - dermal, long-term - systemic	0,772mg/kg/day	0,875
PROC10	---	Worker - inhalative, long-term	0,021mg/m³	< 0,01
PROC10	---	Worker - dermal, long-term - systemic	0,823mg/kg/day	0,933
PROC13	---	Worker - inhalative, long-term	0,07mg/m³	0,023
PROC13	---	Worker - dermal, long-term - systemic	0,685mg/kg/day	0,777

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

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.
Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
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Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES

1. Short title of Exposure Scenario 5: Consumer use	
Main User Groups	SU 21: Consumer uses: Private households (= general public = consumers)
Chemical product category	PC9a: Coatings and paints, thinners, paint removers PC31: Polishes and wax blends PC35: Washing and cleaning products
Environmental Release Categories	ERC8a: Wide dispersive indoor use of processing aids in open systems ERC8b: Wide dispersive indoor use of reactive substances in open systems ERC8c: Wide dispersive indoor use resulting in inclusion into or onto a matrix ERC8d: Wide dispersive outdoor use of processing aids in open systems ERC8e: Wide dispersive outdoor use of reactive substances in open systems ERC8f: Wide dispersive outdoor use resulting in inclusion into or onto a matrix

2.1 Contributing scenario controlling environmental exposure for: ERC8a, ERC8b, ERC8c, ERC8d, ERC8e, ERC8f		
Other given operational conditions affecting environmental exposure	Emission or Release Factor: Water	0,028 kg/day (ERC8a)
	Emission or Release Factor: Water	0,0011 kg/day (ERC8b, ERC8e)
	Emission or Release Factor: Water	0,017 kg/day (ERC8c)
	Emission or Release Factor: Water	0,055 kg/day (ERC8d)
	Emission or Release Factor: Water	0,00275 kg/day (ERC8f)
Conditions and measures related to sewage treatment plant	Type of Sewage Treatment Plant	Municipal sewage treatment plant
Conditions and measures related to external treatment of waste for disposal	Waste treatment	External treatment and disposal of waste should comply with applicable local and/or national regulations.

2.2 Contributing scenario controlling consumer exposure for: PC9a, PC31, PC35		
Product characteristics	Concentration of the Substance in Mixture/Article	Covers concentrations up to 15%
Amount used	Amount used per event	1000 g
Frequency and duration of use	Frequency of use	2 Hours/event
Human factors not influenced by risk management	Exposed skin area	Two hands
Other given operational conditions affecting consumers exposure	Outdoor use	
Conditions and measures related to protection of consumer (e.g. behavioural advice, personal protection and hygiene)	Non spray applications	

3. Exposure estimation and reference to its source

Environment

Contributing Scenario	Specific conditions	Compartment	Value	Level of Exposure	RCR
ERC8a	---	Fresh water	---	0,00104mg/l	< 0,01
ERC8a	---	Marine water	---	0,0000956mg/l	< 0,01
ERC8a	---	Sewage treatment	---	0,000138mg/l	< 0,01

		plant (STP)			
ERC8b	---	Fresh water	---	0,00103mg/l	< 0,01
ERC8b	---	Marine water	---	0,0000943mg/l	< 0,01
ERC8b	---	Sewage treatment plant (STP)	---	0,0000055mg/l	< 0,01
ERC8c	---	Fresh water	---	0,00103mg/l	< 0,01
ERC8c	---	Marine water	---	0,0000951mg/l	< 0,01
ERC8c	---	Sewage treatment plant (STP)	---	0,0000825mg/l	< 0,01
ERC8d	---	Fresh water	---	0,00105mg/l	< 0,01
ERC8d	---	Marine water	---	0,000097mg/l	< 0,01
ERC8d	---	Sewage treatment plant (STP)	---	0,000275mg/l	< 0,01
ERC8e	---	Fresh water	---	0,00103mg/l	< 0,01
ERC8e	---	Marine water	---	0,0000943mg/l	< 0,01
ERC8e	---	Sewage treatment plant (STP)	---	0,0000055mg/l	< 0,01
ERC8f	---	Fresh water	---	0,00103mg/l	< 0,01
ERC8f	---	Marine water	---	0,0000944mg/l	< 0,01
ERC8f	---	Sewage treatment plant (STP)	---	0,0000138mg/l	< 0,01

EUSES.

Consumers

PC9a, PC31, PC35: ECETOC TRA worker v3

Contributing Scenario	Specific conditions	Exposure routes	Level of Exposure	RCR
PC9a, PC31, PC35	---	Consumer - inhalative, long-term - systemic	0,0025mg/m³	< 0,01
PC9a, PC31, PC35	---	Consumer - dermal, long-term - systemic	0,214mg/kg/day	0,681

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

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.
Where other risk management measures/operational conditions are adopted, then users should ensure that risks are managed to at least equivalent levels.
For further information on the assessment method, see: http://www.ecetoc.org/tra
Only properly trained persons shall make use of scaling methods while checking whether the OC and RMM are within the boundaries set by the ES