according to Regulation (EC) No. 1907/2006



# Ethyllinalool 5011728

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

# 1.1 Product identifier

Trade name : Ethyllinalool

REACH Registration Number : 01-2119969272-32-0000 Substance name : 3,7-dimethylnona-1,6-dien-3-ol

CAS-No. : 10339-55-6

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

Use of the Sub- : Ingredient for fragrances

stance/Mixture

#### 1.3 Details of the supplier of the safety data sheet

Company : DSM Nutritional Products Ltd.

PO Box 2676 CH-4002 Basel

Telephone : +41618158888

E-mail address of person : sds.nutritionalproducts@dsm.com

responsible for the SDS

#### 1.4 Emergency telephone number

+41 848 00 11 77 (Carechem 24 International)

#### **SECTION 2: Hazards identification**

# 2.1 Classification of the substance or mixture

### Classification (REGULATION (EC) No 1272/2008)

Skin irritation, Category 2

Eye irritation, Category 2

H315: Causes skin irritation.

H319: Causes serious eye irritation.

H317: May cause an allergic skin reaction.

#### 2.2 Label elements

#### Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms :



Signal word : Warning

Hazard statements : H315 Causes skin irritation.

H317 May cause an allergic skin reaction. H319 Causes serious eye irritation.

Precautionary statements : Prevention:

P261 Avoid breathing dust/ fume/ gas/ mist/ va-

pours/ spray.

P264 Wash skin thoroughly after handling.

P280 Wear protective gloves/ eye protection/ face

protection.

Response:

P333 + P313 If skin irritation or rash occurs: Get medical

advice/ attention.

P337 + P313 If eye irritation persists: Get medical advice/

attention.

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P362 + P364

Take off contaminated clothing and wash it

before reuse.

#### 2.3 Other hazards

None known.

#### **SECTION 3: Composition/information on ingredients**

Synonyms: 1,6-Nonadien-3-ol, 3,7-dimethyl-

**ELL** 

Brief description of the prod-

uct

: Substance

Molecular formula : C11-H20-O

#### 3.1 Substances

#### **Hazardous components**

Chemical name	CAS-No. EC-No.	Concentration (% w/w)
3,7-dimethylnona-1,6-dien-3-ol	10339-55-6 233-732-6	>= 90 - <= 100

#### **SECTION 4: First aid measures**

#### 4.1 Description of first aid measures

General advice : Move out of dangerous area.

Show this safety data sheet to the doctor in attendance.

If inhaled : Move to fresh air.

Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.

Wash off with soap and plenty of water. If symptoms persist, call a physician.

In case of eye contact : Immediately flush eye(s) with plenty of water.

Remove contact lenses. Protect unharmed eye.

Keep eye wide open while rinsing.

If eye irritation persists, consult a specialist.

If swallowed : Rinse mouth with water.

Do not give milk or alcoholic beverages.

Never give anything by mouth to an unconscious person.

Obtain medical attention.

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

Symptoms : No specific symptoms known.

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

Treatment : Treat symptomatically.

# **SECTION 5: Firefighting measures**

according to Regulation (EC) No. 1907/2006



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5.1 Extinguishing media

Alcohol-resistant foam Suitable extinguishing media

Dry chemical

Use extinguishing measures that are appropriate to local cir-

cumstances and the surrounding environment.

Unsuitable extinguishing

media

High volume water jet

5.2 Special hazards arising from the substance or mixture

Specific hazards during fire-

fighting

: None known.

5.3 Advice for firefighters

for firefighters

Special protective equipment : In the event of fire, wear self-contained breathing apparatus.

Further information Fire residues and contaminated fire extinguishing water must

be disposed of in accordance with local regulations.

**SECTION 6: Accidental release measures** 

6.1 Personal precautions, protective equipment and emergency procedures

Personal precautions Use personal protective equipment.

Ensure adequate ventilation.

6.2 Environmental precautions

**Environmental precautions** Try to prevent the material from entering drains or water

courses.

6.3 Methods and material for containment and cleaning up

Soak up with inert absorbent material (e.g. sand, silica gel, Methods for cleaning up

acid binder, universal binder, sawdust).

Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For personal protection see section 8.

For disposal considerations see section 13.

**SECTION 7: Handling and storage** 

7.1 Precautions for safe handling

Advice on safe handling Ensure material transfers are under containment or extract

ventilation.

Ensure adequate ventilation, especially in confined areas.

Avoid contact with skin and eyes. For personal protection see section 8.

Smoking, eating and drinking should be prohibited in the ap-

plication area.

Advice on protection against

fire and explosion

Take necessary action to avoid static electricity discharge.

Product will burn under fire conditions.

MSDS GB/EN 3 / 234

according to Regulation (EC) No. 1907/2006



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Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of work-

#### 7.2 Conditions for safe storage, including any incompatibilities

Requirements for storage areas and containers

To maintain product quality, do not store in heat or direct sun-

light.

Keep container tightly closed and dry.

7.3 Specific end use(s)

Specific use(s) : Not applicable

# **SECTION 8: Exposure controls/personal protection**

#### 8.1 Control parameters

Contains no substances with occupational exposure limit values.

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

Substance name	End Use	Exposure routes	Potential health effects	Value
3,7-dimethylnona- 1,6-dien-3-ol	Workers	Inhalation	Long-term systemic effects	3 mg/m3
	Workers	Inhalation	Acute systemic effects	18 mg/m3
	Workers	Skin contact	Long-term systemic effects	2.7 mg/kg bw/d
	Workers	Skin contact	Long-term local effects	1.6 mg/cm2
	Workers	Skin contact	Acute local effects	1.6 mg/cm2
	Workers	Skin contact	Acute systemic effects	5.5 mg/kg bw/d
	Consumers	Inhalation	Acute systemic effects	4.4 mg/m3
	Consumers	Skin contact	Long-term systemic effects	1.4 mg/kg bw/d
	Consumer use	Skin contact	Long-term local effects	1.6 mg/cm2
	Consumer use	Skin contact	Acute local effects	1.6 mg/cm2
	Consumer use	Skin contact		2.7 mg/kg bw/d
	Consumer use	Ingestion	Long-term systemic effects	0.2 mg/kg bw/d

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

Substance name	Environmental Compartment	Value
3,7-dimethylnona-1,6-dien-3-ol	Fresh water	0.023 mg/l
	Marine water	0.002 mg/l
	Sewage treatment plant	10 mg/l
	Fresh water sediment	0.223 mg/kg dry weight
	Marine sediment	0.022 mg/kg dry weight
	Soil	0.031 mg/kg dry weight
	Predator's prey (freshwater)	8.53 mg/kg

#### 8.2 Exposure controls

### Personal protective equipment

Eye protection : Safety glasses with side-shields

Hand protection

Material : for example nitrile rubber

: Consider the hazard characteristics of this product and any special workplace conditions when selecting the appropriate

type of protective gloves.

according to Regulation (EC) No. 1907/2006



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Skin and body protection : Choose body protection according to the amount and concen-

tration of the dangerous substance at the work place.

Respiratory protection : In the case of vapour formation use a respirator with an ap-

proved filter.

Wear respiratory protection when its use is identified for cer-

tain contributing scenario.

### **SECTION 9: Physical and chemical properties**

#### 9.1 Information on basic physical and chemical properties

Appearance : clear liquid

Colour : colourless - pale yellow

Odour : fresh, floral

Odour Threshold : No information available.

pH : No data available

Melting point/range : < -73 °C (OECD Test Guideline 102)

Boiling point/boiling range : 215 °C (1,013 hPa)

Flash point : 87 °C (1,013 hPa, ISO 13736)

Evaporation rate : not determined

Flammability (solid, gas) : The substance or mixture does not emit flammable gases in

contact with water.

Lower explosion limit : not determined Upper explosion limit : not determined

Vapour pressure : 0.07 hPa (15 °C; OECD Test Guideline 104)

0.18 hPa (25 °C; OECD Test Guideline 104)

48 hPa (122 °C)

Relative vapour density : not determined

Density : 0.862 g/cm3 (20 °C; OECD Test Guideline 109)

Water solubility : 0.656 g/l (20 °C, pH 6.14; OECD Test Guideline 105)

slightly soluble

Solubility in other solvents : various organic solvents: soluble

Partition coefficient: n-

octanol/water

: log Pow 3.3 (20 °C; OECD Test Guideline 107)

Auto-ignition temperature : not pyrophoric

Ignition temperature : 250 °C (1,013 hPa, DIN 51794)

Thermal decomposition : Decomposes on heating.

Violent runaway reaction can occur.

Viscosity, dynamic : ca. 7.3 mPa.s (20 °C)

Explosive properties : Not explosive

Oxidizing properties : Not oxidizing

#### 9.2 Other information

according to Regulation (EC) No. 1907/2006



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Refractive index : 1.462 - 1.466 (589 nm, 20 °C)

Molecular weight : 168.28 g/mol

Surface tension : 27.8 mN/m (20 °C, OECD Test Guideline 115)

#### **SECTION 10: Stability and reactivity**

#### 10.1 Reactivity

No hazards to be specially mentioned.

#### 10.2 Chemical stability

Stable under recommended storage conditions.

#### 10.3 Possibility of hazardous reactions

Possible incompatibility with materials listed under section 10.5.

#### 10.4 Conditions to avoid

Heat

Exposure to air.

#### 10.5 Incompatible materials

Acids and bases Oxidizing agents

#### 10.6 Hazardous decomposition products

Peroxides

Carbon monoxide, carbon dioxide and unburned hydrocarbons (smoke).

#### **SECTION 11: Toxicological information**

# 11.1 Information on toxicological effects

Acute oral toxicity : LD50 (Rat): ca. 5,280 mg/kg

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg

Skin irritation : Irritating to skin. (In vitro study, EPISKIN Human Skin Model

Test)

Eye irritation : Eye irritation (Rabbit)

Sensitisation : The product is a skin sensitiser, sub-category 1B. (Mouse, Lo-

cal Lymph Node Assay (LLNA), OECD Test Guideline 429)

Genotoxicity in vitro : not mutagenic (Ames test, OECD Test Guideline 471)

: not genotoxic (Chromosome aberration test in vitro, OECD Test

Guideline 473)

Test performed using a similar product.

: not genotoxic (In vitro gene mutation study in mammalian cells,

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OECD Test Guideline 476)

Test performed using a similar product.

Genotoxicity in vivo : not genotoxic (Mutagenicity (micronucleus test), Mouse, Oral,

OECD Test Guideline 474)

Test performed using a similar product.

Carcinogenicity : This information is not available.

Reproductive toxicity : Test performed using a similar product.

NOAEL: 200 mg/kg bw/d (Rat, females, Oral, OECD Test Gui-

deline 421)

Teratogenicity : Test performed using a similar product.

NOAEL: 1,000 mg/kg body weight (Rat, Oral)

STOT - single exposure (A-

cute exposure)

: The substance or mixture is not classified as specific target

organ toxicant, single exposure.

STOT - repeated exposure : NOAEL (Oral, Rat, male and female) : 160 mg/kg bw/d

Subacute toxicity study (28 days)
Test performed using a similar product.

(OECD Test Guideline 407)

: NOAEL (Dermal, Rat, male and female): 250 mg/kg bw/d

Sub-chronic toxicity study (90-day)
Test performed using a similar product.

(OECD Test Guideline 411)

Further information : May cause irritation of respiratory tract.

Aspiration toxicity : No aspiration toxicity classification

#### **SECTION 12: Ecological information**

#### 12.1 Toxicity

Toxicity to fish : Danio rerio (zebra fish)

LC50 (96 h) 24 mg/l (OECD Test Guideline 203)

Toxicity to daphnia and other

aquatic invertebrates

: Daphnia magna (Water flea)

EC50 (48 h) 23 mg/l (OECD Test Guideline 202)

Toxicity to algae : Desmodesmus subspicatus (green algae)

ErC50 (72 h) 25.1 mg/l (OECD Test Guideline 201)

: Desmodesmus subspicatus (green algae)

NOEC (72 h) 6.3 mg/l (OECD Test Guideline 201)

#### 12.2 Persistence and degradability

according to Regulation (EC) No. 1907/2006



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Biodegradability : Readily biodegradable.

91 % (28 d)

(OECD Test Guideline 301C)

12.3 Bioaccumulative potential

Partition coefficient: n-

octanol/water

: log Pow 3.3 ( 20 °C ; OECD Test Guideline 107)

12.4 Mobility in soil

Distribution among environ-

mental compartments

: No data available

Surface tension : 27.8 mN/m ( 20 °C, OECD Test Guideline 115)

12.5 Results of PBT and vPvB assessment

: The substance does not fullfill the PBT criteria. Assessment

The substance does not fullfill the vPvB criteria.

12.6 Other adverse effects

Additional ecological informa: Harmful to aquatic organisms.

tion

**SECTION 13: Disposal considerations** 

13.1 Waste treatment methods

Product Discharge into the environment must be avoided.

Do not contaminate ponds, waterways or ditches with chemi-

cal or used container.

Do not dispose of waste into sewer.

Offer surplus and non-recyclable solutions to a licensed dis-

posal company.

Contaminated packaging Do not burn, or use a cutting torch on, the empty drum.

> Dispose of as unused product. Do not re-use empty containers.

**SECTION 14: Transport information** 

14.1 UN number

Not regulated as a dangerous good

14.2 UN proper shipping name

Not regulated as a dangerous good

14.3 Transport hazard class(es)

Not regulated as a dangerous good

14.4 Packing group

Not regulated as a dangerous good

14.5 Environmental hazards

Not regulated as a dangerous good

14.6 Special precautions for user

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Remarks : Not classified as dangerous in the meaning of transport regu-

lations.

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

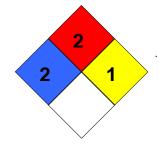
Not applicable for product as supplied.

### **SECTION 15: Regulatory information**

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

NFPA Classification : Health hazard: 2

Fire Hazard: 2 Reactivity Hazard: 1



#### 15.2 Chemical safety assessment

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

#### **SECTION 16: Other information**

#### Full text of other abbreviations

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

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tory; TRGS - Technical Rule for Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

DNEL - Derived No-Effect Level; NFPA - National Fire Protection Association (USA); PNEC - Predicted No-Effect Concentration; STEL - Short term exposure limit; TLV-C - Ceiling Limit Value; TWA - Time Weighted Average; WEL - Workplace Exposure Limit.

#### **Further information**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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# **Annex**

	,
	Title of Exposure Scenario
ES 1:	Compounding of fragrance oils (large/medium sites)
ES 2:	Compounding of fragrance oils (small sites)
ES 3:	Formulation of Cosmetics: low viscosity liquids (Shampoo, hair conditioner, shower gel, foam bath) (large scale), body care soap (medium and large scale) Cosmetics Europe / COLIPA
ES 4:	Formulation of Cosmetics: low viscosity liquids (Shampoo, hair conditioner, shower gel, foam bath) (medium scale), body care soap (medium scale) Cosmetics Europe / COLIPA
ES 5:	Formulation of Cosmetics: low viscosity liquids (Shampoo, hair conditioner, shower gel, foam bath) (small scale) Cosmetics Europe / COLIPA
ES 6:	Formulation of Cosmetics: Medium Viscosity Body Care Products (medium scale), Non-liquid Creams (skin care, body care, mascara, solar oil, make-up foundation) (large scale) Cosmetics Europe / COLIPA
ES 7:	Formulation of Cosmetics: Non-liquid Creams (skin care, body care, mascara, solar oil, make-up foundation) (small scale) Cosmetics Europe / COLIPA
ES 8:	Cosmetics Europe / COLIPA Formulation of Cosmetics: Fine Fragrances - Cleaning with Water (medium scale), Medium Viscosity Body Care Products (small scale), Non-liquid Creams (skin care, body care, mascara, solar oil, make-up foundation) (medium scale)
ES 9:	Cosmetics Europe / COLIPA Formulation of Cosmetics: Fine Fragrances - Cleaning with Water (small scale)
ES 10:	Cosmetics Europe / COLIPA Formulation of cosmetic products involving cleaning with Organic Solvents (Varnish / Removers, Decorative Cosmetics, Spray, Lacquer, Fine Fragrance, Solar oil, solid products)
ES 11:	Cosmetics Europe / COLIPA Formulation of body care soap (small scale)
ES 12:	Formulation of Detergents/Maintenance Products: Granular Regular (large scale), Granular Compact (small scale), Low Viscosity Liquids (large scale) (AISE)
ES 13:	(AISE) Formulation of Detergents/Maintenance Products: High Viscosity Liquids (medium scale) Formulation of liquid Detergents/Maintenance Products: High Viscosity (large scale)
ES 14:	(AISE) Formulation of Detergents/Maintenance Products: High Viscosity Liquids (medium scale)
ES 15:	(AISE) Formulation of Detergents/Maintenance Products: High Viscosity Liquids (small scale)
ES 16:	(AISE) Formulation of Detergents/Maintenance Products: Granular Compact (large scale)
ES 17:	(AISE) Formulation of Detergents/Maintenance Products: Granular Compact (small scale)
ES 18:	(AISE) Formulation of Detergents/Maintenance Products: Granular Regular (small scale), Low Viscosity Liquids (small scale)
ES 19:	(AISE) Formulation of air care products
ES 20:	Formulation
ES 21:	(AISE) Industrial use of detergents and maintenance products / Indoor
ES 22:	(AISE) Industrial use of detergents and maintenance products / Outdoor
ES 23:	(AISE) Professional use in cleaning agents / Indoor
ES 24:	Professional outdoor use of detergents and maintenance products (AISE)
ES 25:	Professional use Polishes and wax blends (AISE)
ES 26:	Consumer Washing and cleaning products (including solvent based products) (AISE)
ES 27:	Consumer use of air care products (AISE)
ES 28:	Biocides (AISE)
ES 29:	Polishes and wax blends (AISE)
ES 30:	Consumer use of cosmetics

### **Abbreviations**

ART = Advanced REACH Tool

according to Regulation (EC) No. 1907/2006



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ECETOC TRA = European Centre for Ecotoxicology and Toxicology Of Chemicals - Targeted Risk Assessment

ES = Exposure scenario

EUSES = European Union System for the Evaluation of Substances

PEC = Predicted exposure concentration

RCR = Risk characterisation ratio: "Level of Exposure/DNEL" or "PEC/PNEC"

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# ES 1: Compounding of fragrance oils (large/medium sites)

1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

**PROC5:** Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant

contact)

**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 con-

tainers (dedicated filling line, including weighing)

PROC15: Use as laboratory reagent

Environmental Release Categories : **ERC2**: Formulation of preparations

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 434 t

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa- : 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 2.5 %
Emission or Release Factor: Water : 0.2 %
Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

according to Regulation (EC) No. 1907/2006



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Flow rate of sewage treatment

plant effluent

: 2,000 m3/d

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

#### 2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid substance

**Product characteristics** 

Mixture/Article

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

# 2.3 Contributing scenario controlling worker exposure for: PROC2, Liquid substance

**Product characteristics** 

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

Mixture/Article

100 % (unless stated differently).

Physical Form (at time of use)

: Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

# 2.4 Contributing scenario controlling worker exposure for: PROC2, PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

Mixture/Article 25

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

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# 2.5 Contributing scenario controlling worker exposure for: PROC3, Liquid substance

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

### 2.6 Contributing scenario controlling worker exposure for: PROC5, Liquid substance

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide appropriate exhaust ventilation at machinery. (Effectiveness (of a measure): 90 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

# 2.7 Contributing scenario controlling worker exposure for: PROC8b, Liquid substance

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide appropriate exhaust ventilation at machinery. (Effectiveness (of a measure): 95 %)

Provide enhanced general ventilation by mechanical means. (Effectiveness (of a measure): 30 %)

according to Regulation (EC) No. 1907/2006



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

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)

# 2.8 Contributing scenario controlling worker exposure for: PROC8a, Liquid mixture

**Product characteristics** 

: Covers the percentage of the substance in the product up to Concentration of the Substance in

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide appropriate exhaust ventilation at machinery. (Effectiveness (of a measure): 90 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

#### 2.9 Contributing scenario controlling worker exposure for: PROC8b, Liquid mixture

: Loading and unloading Activity

**Product characteristics** 

Mixture/Article

: Covers the percentage of the substance in the product up to

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Concentration of the Substance in

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide enhanced general ventilation by mechanical means. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 2.10 Contributing scenario controlling worker exposure for: PROC9, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Physical Form (at time of use)

: Covers the percentage of the substance in the product up to 25 %.

Mixture/Article

: Liquid mixture

MSDS GB/EN 16 / 234

according to Regulation (EC) No. 1907/2006



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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide enhanced general ventilation by mechanical means. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.11 Contributing scenario controlling worker exposure for: PROC15, Liquid substance

**Product characteristics** 

Mixture/Article

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide sufficient air exchange and/or exhaust in work rooms. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

### 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.02 mg/l	0.74
			Fresh water sedi-		0.17 mg/kg dry	0.75
			ment		weight	
			Marine water		0.002 mg/l	0.74
			Marine sediment		0.02 mg/kg dry weight	0.74
			Sewage treatment plant		0.17 mg/l	0.02
			Soil		0.02 mg/kg dry weight	0.76

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1, Liquid sub-	TRA Workers	Worker (Indus-	Inhalation: long-term,	0.14 mg/m <sup>3</sup>	0.05

according to Regulation (EC) No. 1907/2006



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stance	3.0	trial)	systemic		
PROC1	TRA Workers 3.0	triary	Inhalation: short-term, systemic	0.28 mg/cm2	0.02
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.005 mg/cm2	0.006
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC2, Liquid sub- stance	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC2	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/cm2	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC2	TRA Workers 3.0		Dermal: acute, local	0.2 mg/cm2	0.13
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.2 mg/cm2	0.13
PROC2, PROC15, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.07 mg/m <sup>3</sup>	0.02
PROC2, PROC15	TRA Workers 3.0		Inhalation: short-term, systemic	0.28 mg/m <sup>3</sup>	0.02
PROC2, PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/cm2	0.01
PROC2, PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	0.01
PROC2, PROC15	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	0.01
PROC3, Liquid sub- stance	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.1 mg/m³	0.70
PROC3	TRA Workers 3.0	,	Inhalation: short-term, systemic	8.4 mg/cm2	0.47
PROC3	TRA Workers 3.0		Dermal: long-term, systemic	0.69 mg/kg bw/day	0.26
PROC3	TRA Workers 3.0		Chronic dermal local exposure	0.20 mg/cm2	0.13
PROC3	TRA Workers 3.0		Dermal: acute, local	0.20 mg/cm2	0.13
PROC5, Liquid sub- stance	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.35 mg/m³	0.12
PROC5	TRA Workers 3.0	,	Inhalation: short-term, systemic	1.40 mg/cm2	0.08
PROC5	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC5	TRA Workers 3.0		Chronic dermal local exposure	0.2 mg/cm2	0.13
PROC5	TRA Workers 3.0		Dermal: acute, local	0.2 mg/cm2	0.13
PROC8b, Liquid sub- stance	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.23 mg/m <sup>3</sup>	0.41
PROC8b	TRA Workers 3.0	,	Inhalation: short-term, systemic	4.91 mg/m³	0.27
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/cm2	0.51
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8a, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.42 mg/m <sup>3</sup>	0.14
PROC8a	TRA Workers 3.0	,	Inhalation: short-term, systemic	1.68 mg/m <sup>3</sup>	0.09
PROC8a	TRA Workers		Dermal: long-term,	1.65 mg/cm2	0.61

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Version 4.0 Revision Date 18.11.2019 Date of last issue: 02.10.2014 3.0 systemic PROC8a 0.12 mg/cm2 TRA Workers 0.08 Chronic dermal local 3.0 exposure PROC8a TRA Workers 0.12 mg/cm2 0.08 Dermal: acute, local 3.0 Inhalation: long-term, PROC8b, Liquid mix-TRA Workers Worker (Indus-1.23 mg/m<sup>3</sup> 0.41 ture 3.0 trial) systemic PROC8b TRA Workers Inhalation: short-term, 4.91 mg/m<sup>3</sup> 0.27 3.0 systemic PROC8b TRA Workers Dermal: long-term, 1.37 mg/cm2 0.51 3.0 systemic PROC8b TRA Workers 0.1 mg/cm2 0.06 Dermal: acute, local 3.0 PROC8b TRA Workers Chronic dermal local 0.1 mg/cm2 0.06 3.0 exposure PROC9, Liquid mix-TRA Workers Worker (Indus-1.47 mg/m<sup>3</sup> 0.49 Inhalation: long-term, ture 3.0 trial) systemic PROC9 TRA Workers Inhalation: short-term, 5.89 mg/m<sup>3</sup> 0.33 3.0 systemic PROC9 TRA Workers 0.82 mg/cm2 0.31 Dermal: long-term, 3.0 systemic 0.12 mg/cm2 PROC9 TRA Workers Chronic dermal local 0.08 3.0 exposure PROC9 0.12 mg/cm2 0.08 TRA Workers Dermal: acute, local 3.0 TRA Workers PROC15, Liquid sub-Worker (Indus-Inhalation: long-term, 2.45 mg/m<sup>3</sup> 0.82 trial) stance 3.0 systemic PROC15 TRA Workers Inhalation: short-term, 9.82 mg/cm2 0.55 3.0 systemic PROC15 0.34 mg/cm2 TRA Workers 0.13 Dermal: long-term, 3.0 systemic PROC15 TRA Workers Chronic dermal local 0.01 mg/cm2 0.06 3.0 exposure PROC15 TRA Workers Dermal: acute, local 0.01 mg/cm2 0.06 3.0

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

assumes operating temperature: <= 40 °C

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

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

EUSES = EUSES version 2.1.1

MSDS GB/EN

according to Regulation (EC) No. 1907/2006



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# ES 2: Compounding of fragrance oils (small sites)

# 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

**PROC5:** Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant

contact

**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 con-

tainers (dedicated filling line, including weighing)

PROC15: Use as laboratory reagent

Environmental Release Categories : **ERC2**: Formulation of preparations

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa- : 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 2.5 % Emission or Release Factor: Water : 0.5 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

: 2,000 m3/d

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

according to Regulation (EC) No. 1907/2006



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Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

# 2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid substance

**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) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

### 2.3 Contributing scenario controlling worker exposure for: PROC2, Liquid substance

**Product characteristics** 

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

Mixture/Article

100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.4 Contributing scenario controlling worker exposure for: PROC3, Liquid substance

**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) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

# 2.5 Contributing scenario controlling worker exposure for: PROC5, Liquid substance

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

according to Regulation (EC) No. 1907/2006



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Mixture/Article 100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide appropriate exhaust ventilation at machinery. (Effectiveness (of a measure): 90 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.6 Contributing scenario controlling worker exposure for: PROC8b, Liquid substance

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). (Effec-

tiveness (of a measure): 70 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.7 Contributing scenario controlling worker exposure for: PROC15, Liquid substance

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide sufficient air exchange and/or exhaust in work rooms. (Effectiveness (of a measure): 30 %)

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

according to Regulation (EC) No. 1907/2006



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Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.8 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.9 Contributing scenario controlling worker exposure for: PROC8a, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide appropriate exhaust ventilation at machinery. (Effectiveness (of a measure): 90 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

#### 2.10 Contributing scenario controlling worker exposure for: PROC8b, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide enhanced general ventilation by mechanical means. (Effectiveness (of a measure): 30 %)

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

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Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 2.11 Contributing scenario controlling worker exposure for: PROC9, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

#### **Technical conditions and measures**

Provide enhanced general ventilation by mechanical means. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

### 2.12 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

# 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.021 mg/l	0.93
			Fresh water sedi- ment		0.21 mg/kg dry weight	0.94
			Marine water		0.002 mg/l	0.93
			Marine sediment		0.02 mg/kg dry weight	0.93
			Sewage treatment plant		0.21 mg/l	0.02
			Soil		0.03 mg/kg dry	0.92

according to Regulation (EC) No. 1907/2006



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Ī			weight	

# Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.07 mg/m <sup>3</sup>	0.02
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.28 mg/m <sup>3</sup>	0.02
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/cm2	0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC2, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC2	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/cm2	0.51
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.2 mg/cm2	0.13
PROC2	TRA Workers 3.0		Dermal: acute, local	0.2 mg/cm2	0.13
PROC3, liquid	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m³	0.70
PROC3	TRA Workers 3.0	,	Inhalation: short-term, systemic	8.41 mg/m³	0.47
PROC3	TRA Workers 3.0		Dermal: long-term, systemic	0.69 mg/cm2	0.26
PROC3	TRA Workers 3.0		Chronic dermal local exposure	0.20 mg/cm2	0.13
PROC3	TRA Workers 3.0		Dermal: acute, local	0.2 mg/cm2	0.13
PROC5, Liquid sub- stance	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.35 mg/m³	0.12
PROC5	TRA Workers 3.0	,	Inhalation: short-term, systemic	1.40 mg/m³	0.08
PROC5	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/cm2	0.51
PROC5	TRA Workers 3.0		Chronic dermal local exposure	0.2 mg/cm2	0.13
PROC5	TRA Workers 3.0		Dermal: acute, local	0.2 mg/cm2	0.13
PROC8b, Liquid sub- stance	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.05 mg/m³	0.35
PROC8b	TRA Workers 3.0	,	Inhalation: short-term, systemic	4.21 mg/m³	0.23
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/cm2	0.51
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC15, Liquid sub- stance	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m <sup>3</sup>	0.82
PROC15	TRA Workers 3.0	/	Inhalation: short-term, systemic	9.82 mg/cm2	0.55
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.34 mg/cm2	0.13
PROC15	TRA Workers		Chronic dermal local	0.01 mg/cm2	0.06

according to Regulation (EC) No. 1907/2006



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Version 4.0 **Revision Date 18.11.2019** Date of last issue: 02.10.2014 3.0 exposure PROC15 0.01 mg/cm2 TRA Workers 0.06 Dermal: acute, local 3.0 PROC2, Liquid mix-Worker (Indus-Inhalation: long-term, 0.42 mg/m<sup>3</sup> 0.14 TRA Workers ture 3.0 trial) systemic PROC2 TRA Workers Inhalation: short-term, 1.68 mg/m<sup>3</sup> 0.09 3.0 systemic PROC2 TRA Workers Dermal: long-term, 0.82 mg/cm2 0.30 3.0 systemic PROC2 TRA Workers Chronic dermal local 0.12 mg/cm2 0.08 3.0 exposure PROC2 TRA Workers 0.12 mg/cm2 0.08 Dermal: acute, local 3.0 PROC8a, Liquid mix-TRA Workers Worker (Indus-Inhalation: long-term, 0.42 mg/m<sup>3</sup> 0.14 ture 3.0 trial) systemic PROC8a TRA Workers Inhalation: short-term, 1.68 mg/m<sup>3</sup> 0.09 systemic 3.0 PROC8a TRA Workers 1.65 mg/cm2 0.61 Dermal: long-term, 3.0 systemic 0.12 mg/cm2 PROC8a TRA Workers 0.08 Chronic dermal local 3.0 exposure PROC8a TRA Workers Dermal: acute, local 0.12 mg/cm2 0.08 3.0 PROC8b, Liquid mix-Worker (Indus-Inhalation: long-term, 1.47 mg/m<sup>3</sup> 0.49 TRA Workers 3.0 trial) systemic ture Inhalation: short-term, PROC8b TRA Workers 5.89 mg/m<sup>3</sup> 0.33 3.0 systemic PROC8b TRA Workers Dermal: long-term, 0.82 mg/cm2 0.31 3.0 systemic PROC8b TRA Workers 0.06 mg/cm2 0.04 Dermal: acute, local 3.0 PROC8b TRA Workers Chronic dermal local 0.06 mg/cm2 0.04 3.0 exposure PROC9, Liquid mix-TRA Workers Worker (Indus-Inhalation: long-term, 1.47 mg/m<sup>3</sup> 0.49 trial) systemic ture 3.0 PROC9 TRA Workers Inhalation: short-term, 5.89 mg/m<sup>3</sup> 0.33 3.0 systemic PROC9 TRA Workers Dermal: long-term, 0.82 mg/cm2 0.31 3.0 systemic PROC9 TRA Workers Chronic dermal local 0.12 mg/cm2 0.08 3.0 exposure PROC9 0.12 mg/cm2 0.08 TRA Workers Dermal: acute, local 3.0 PROC15, Liquid mix-TRA Workers Worker (Indus-Inhalation: long-term, 2.10 mg/m<sup>3</sup> 0.70 ture 3.0 trial) systemic PROC15 TRA Workers Inhalation: short-term, 8.41 mg/cm2 0.47 3.0 systemic 0.20 mg/cm2 0.08 PROC15 TRA Workers Dermal: long-term, 3.0 systemic PROC15 TRA Workers Chronic dermal local 0.06 mg/cm2 0.04

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

assumes operating temperature: <= 40 °C

PROC15

3.0

TRA Workers

3.0

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

exposure

Dermal: acute, local

0.06 mg/cm2

0.04

MSDS GB/EN

according to Regulation (EC) No. 1907/2006



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

EUSES = EUSES version 2.1.1



# **Ethyllinalool**

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# ES 3: Formulation of Cosmetics: low viscosity liquids (Shampoo, hair conditioner, shower gel, foam bath) (large scale), body care soap (medium and large scale) Cosmetics Europe / COLIPA

# 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

: PROC1: Use in closed process, no likelihood of exposure Process categories

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

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)

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 con-

tainers (dedicated filling line, including weighing)

PROC14: Production of preparations or articles by tabletting,

compression, extrusion, pelletisation PROC15: Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

**Environmental Release Categories** 

: **ERC2:** Formulation of preparations Further information : Cosmetics Europe / COLIPA

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic 7.28 mPa.s (at 20 °C)

**Amount used** 

Daily amount per site : 3252 kg

Remarks : amount used for the exposure estimation

Annual amount per site (Msafe) : 812.9 t

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa- : 18,000 m3/d

ter

MSDS GB/EN 28 / 234

according to Regulation (EC) No. 1907/2006



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Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 % Emission or Release Factor: Water : 0.1 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

: All contaminated waste water must be processed in an indus-Water

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment : 2,000 m3/d

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity **Product characteristics**  : Process sampling

Concentration of the Substance in Mixture/Article

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

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: Covers the percentage of the substance in the product up to

according to Regulation (EC) No. 1907/2006



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### 2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

# 2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

# 2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

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**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Cove

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Solid mixture

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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

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: Covers percentage substance in the product up to 1 %.

according to Regulation (EC) No. 1907/2006



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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

according to Regulation (EC) No. 1907/2006



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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)

# 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.02 mg/l	0.88
			Fresh water sedi- ment		0.20 mg/kg dry weight	0.88
			Marine water		0.002 mg/l	0.88
			Marine sediment		0.02 mg/kg dry weight	0.88
			Sewage treatment plant		0.2 mg/l	0.02
			Soil		0.03 mg/kg dry weight	0.85

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific condi- tions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m³	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers	·	Inhalation: short-term,	8.41 mg/cm2	0.47

according to Regulation (EC) No. 1907/2006



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PROC15	Etnyllinalooi				5011/2	Ö
PROC15	Version 4.0	Re	vision Date 18.	11.2019 D	ate of last issue: 02	.10.2014
PROC15		•		i	l I	
PROC15   TRA Workers   Chronic dermal local   0.06 mg/cm2   0.04	DDOC45				0.00 ====//	0.00
PROC15		3.0		systemic		
PROC15	PROC15				0.06 mg/cm2	0.04
PROC2	PROC15	TRA Workers			0.06 mg/cm2	0.04
ture	PROC2 Liquid mix-		Worker (Indus-	Inhalation: long-term	0.70 ma/m³	0.23
PROC2	ture	3.0	,	systemic	· ·	
PROC2		3.0				0.16
PROC2	PROC2				0.14 mg/kg bw/day	0.05
PROC2	PROC2			Chronic dermal local	0.02 mg/cm2	0.01
PROC4_PROC8a, PROC9, ROC9a, PROC9b,	PROC2	TRA Workers			0.02 mg/cm2	0.01
PROC3b, PROC9, Liquid mixture	DDOC4 DDOC82		Worker (Indus	Inhalation: long torm	<− 0.70 mg/m³	0.22
PROC3, PROC3a, PROC9   3.0   Systemic   Sy	PROC8b, PROC9,				<= 0.70 mg/m²	<= 0.23
PROC4, PROC8a, PROC9 3.0 PROC8b, PROC9 3.0 PROC4, PROC8a, PROC9 PROC4, PROC8a, PROC9 3.0 PROC4, PROC8a, PROC9 3.0 PROC8b, PROC9 3.0 Dermal: local exposure PROC4b, PROC8b, PROC9 3.0 Dermal: acute, local PROC8b, PROC9 3.0 Dermal: acute, local exposure PROC15, Liquid mix-ture 3.0 Vertex (Indus-systemic PROC15 TRA Workers 3.0 Vertex (Indus-ture 3.0 Vertex (Indus-systemic PROC19 TRA Workers 3.0 Vertex (Indus-ture 3.0 Vertex (Indus-systemic PROC19 TRA Workers 3.0 Vertex (Indus-systemic PROC3 TRA Workers And W		TRA Workers		Inhalation: short-term,	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC4, PROC8a, PROC9   3.0   Systemic   Dw/day   PROC4, PROC8a, PROC8a, PROC9   3.0   PROC4, PROC8a, PROC9   3.0   Dermal: acute, local exposure   expos					Ţ.	
PROC4, PROC8a, PROC9   ROC8b, PROC9   ROC8b, PROC9   ROC4, PROC8a, PROC9   ROC8b, PROC9   ROC8b, PROC9   ROC8b, PROC9   ROC9   ROC8b, PROC9   ROC8b, PROC9	PROC4, PROC8a,					<= 0.51
PROC4, PROC9   3.0   exposure						
PROC4, PROC8a, PROC9		TRA Workers		Chronic dermal local	0.1 mg/cm2	0.06
PROC15, Liquid mix-ture						
PROC15, Liquid mix-ture         TRA Workers 3.0         Worker (Industrial)         Inhalation: long-term, systemic         2.45 mg/m³         0.82           PROC15         TRA Workers 3.0         Inhalation: short-term, systemic         9.82 mg/m³         0.55           PROC15         TRA Workers 3.0         Dermal: long-term, systemic         0.03 mg/kg bw/d         0.01           PROC15         TRA Workers 3.0         Chronic dermal local exposure         0.01 mg/cm2         < 0.01				Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC15         TRA Workers 3.0         Inhalation: short-term, systemic         9.82 mg/m³ 3.0.55         0.55           PROC15         TRA Workers 3.0         Dermal: long-term, systemic         0.03 mg/kg bw/d         0.01           PROC15         TRA Workers 3.0         Chronic dermal local exposure         0.01 mg/cm2         < 0.01	PROC15, Liquid mix-	TRA Workers			2.45 mg/m³	0.82
PROC15			,		9.82 mg/m³	0.55
RROC15   TRA Workers   Chronic dermal local   exposure		3.0		systemic		
PROC15         TRA Workers 3.0         Chronic dermal local exposure         0.01 mg/cm2 exposure         < 0.01           PROC15         TRA Workers 3.0         Dermal: acute, local         0.01 mg/cm2         < 0.01	PROC15				0.03 mg/kg bw/d	0.01
PROC15         TRA Workers 3.0         Dermal: acute, local 1.0.01 mg/cm2         < 0.01 mg/cm2         < 0.01           PROC19, Liquid mixture         TRA Workers 3.0         Worker (Industical)         Inhalation: long-term, systemic         0.70 mg/m³         0.23           PROC19         TRA Workers 3.0         Inhalation: short-term, systemic         2.81 mg/m³         0.16           PROC19         TRA Workers 3.0         Dermal: long-term, systemic         1.41 mg/kg bw/d         0.52           PROC19         TRA Workers 3.0         Chronic dermal local exposure         0.05 mg/cm2         0.03           PROC19         TRA Workers 3.0         Dermal: acute, local exposure         0.05 mg/cm2         0.03           PROC3, Solid mixture         TRA Workers 3.0         Inhalation: long-term, systemic         1.26 mg/m³         0.42           PROC3         TRA Workers 3.0         Inhalation: short-term, systemic         5.05 mg/m³         0.28           PROC3         TRA Workers 3.0         Dermal: long-term, systemic         0.41 mg/kg bw/day         0.15           PROC3         TRA Workers 3.0         Chronic dermal local exposure         0.12 mg/cm2         0.08           PROC3         TRA Workers 3.0         Dermal: acute, local exposure         0.12 mg/cm2         0.08           PROC5, Solid mixture	PROC15			Chronic dermal local	0.01 mg/cm2	< 0.01
PROC19, Liquid mixture         TRA Workers 3.0         Worker (Industrial)         Inhalation: long-term, systemic         0.70 mg/m³         0.23           PROC19         TRA Workers 3.0         Inhalation: short-term, systemic         2.81 mg/m³         0.16           PROC19         TRA Workers 3.0         Dermal: long-term, systemic         1.41 mg/kg bw/d         0.52           PROC19         TRA Workers 3.0         Chronic dermal local exposure         0.05 mg/cm2         0.03           PROC19         TRA Workers 3.0         Dermal: acute, local systemic         0.05 mg/cm2         0.03           PROC3, Solid mixture         TRA Workers 3.0         Inhalation: long-term, systemic         1.26 mg/m³         0.42           PROC3         TRA Workers 3.0         Inhalation: short-term, systemic         5.05 mg/m³         0.28           PROC3         TRA Workers 3.0         Dermal: long-term, systemic         0.41 mg/kg bw/day         0.15           PROC3         TRA Workers 3.0         Chronic dermal local exposure         0.12 mg/cm2         0.08           PROC3         TRA Workers 3.0         Dermal: acute, local ong-term, systemic         0.12 mg/cm2         0.08           PROC5, Solid mixture         TRA Workers 3.0         Inhalation: short-term, systemic         5.89 mg/m³         0.33           PROC5 <td>PROC15</td> <td>TRA Workers</td> <td></td> <td></td> <td>0.01 mg/cm2</td> <td>&lt; 0.01</td>	PROC15	TRA Workers			0.01 mg/cm2	< 0.01
PROC19         TRA Workers 3.0         Inhalation: short-term, systemic         2.81 mg/m³         0.16           PROC19         TRA Workers 3.0         Dermal: long-term, systemic         1.41 mg/kg bw/d         0.52           PROC19         TRA Workers 3.0         Chronic dermal local exposure         0.05 mg/cm2         0.03           PROC19         TRA Workers 3.0         Dermal: acute, local over 1.26 mg/m³         0.05 mg/cm2         0.03           PROC3, Solid mixture PROC3         TRA Workers 3.0         Inhalation: long-term, systemic         1.26 mg/m³         0.42           PROC3         TRA Workers 3.0         Inhalation: short-term, systemic         5.05 mg/m³         0.28           PROC3         TRA Workers 3.0         Dermal: long-term, systemic         0.41 mg/kg bw/day         0.15           PROC3         TRA Workers 3.0         Chronic dermal local exposure         0.12 mg/cm2         0.08           PROC3         TRA Workers 3.0         Dermal: acute, local         0.12 mg/cm2         0.08           PROC5, Solid mixture         TRA Workers 3.0         Inhalation: long-term, systemic         1.47 mg/m³         0.49           PROC5         TRA Workers 3.0         Inhalation: short-term, systemic         5.89 mg/m³         0.33           PROC5         TRA Workers         Dermal: long-ter	PROC19, Liquid mix-	TRA Workers			0.70 mg/m <sup>3</sup>	0.23
ROC19			trial)			
ROC19	PROC19				2.81 mg/m³	0.16
PROC19         TRA Workers 3.0         Chronic dermal local exposure         0.05 mg/cm2         0.03           PROC19         TRA Workers 3.0         Dermal: acute, local 3.0         0.05 mg/cm2         0.03           PROC3, Solid mixture         TRA Workers 3.0         Worker (Industrial)         Inhalation: long-term, systemic         1.26 mg/m³         0.42           PROC3         TRA Workers 3.0         Inhalation: short-term, systemic         5.05 mg/m³         0.28           PROC3         TRA Workers 3.0         Dermal: long-term, systemic         0.41 mg/kg bw/day         0.15           PROC3         TRA Workers 3.0         Chronic dermal local exposure         0.12 mg/cm2         0.08           PROC3         TRA Workers 3.0         Dermal: acute, local exposure         0.12 mg/cm2         0.08           PROC5, Solid mixture         TRA Workers 3.0         Trial)         Inhalation: long-term, systemic         1.47 mg/m³         0.49           PROC5         TRA Workers 3.0         Inhalation: short-term, systemic         5.89 mg/m³         0.33           PROC5         TRA Workers         Dermal: long-term, oxermical properties         0.82 mg/kg bw/day         0.31	PROC19				1.41 mg/kg bw/d	0.52
PROC19         TRA Workers 3.0         Dermal: acute, local 1.26 mg/cm2         0.03 mg/cm2         0.03           PROC3, Solid mixture         TRA Workers 3.0 trial)         Inhalation: long-term, systemic         1.26 mg/m³ 0.42         0.42           PROC3         TRA Workers 3.0 systemic         Inhalation: short-term, systemic         5.05 mg/m³ 0.28         0.28           PROC3         TRA Workers 3.0 systemic         Dermal: long-term, systemic         0.41 mg/kg bw/day         0.15           PROC3         TRA Workers 3.0 systemic         Chronic dermal local exposure         0.12 mg/cm2 0.08         0.08           PROC5, Solid mixture         TRA Workers 3.0 trial)         Inhalation: long-term, systemic         1.47 mg/m³ 0.49         0.49           PROC5         TRA Workers 3.0 trial)         Inhalation: short-term, systemic         5.89 mg/m³ 0.33         0.33           PROC5         TRA Workers 3.0 trial)         Dermal: long-term, systemic         0.82 mg/kg bw/day         0.31	PROC19	TRA Workers			0.05 mg/cm2	0.03
PROC3, Solid mixture         TRA Workers 3.0         Worker (Industrial)         Inhalation: long-term, systemic         1.26 mg/m³         0.42           PROC3         TRA Workers 3.0         Inhalation: short-term, systemic         5.05 mg/m³         0.28           PROC3         TRA Workers 3.0         Dermal: long-term, systemic         0.41 mg/kg bw/day         0.15           PROC3         TRA Workers 3.0         Chronic dermal local exposure         0.12 mg/cm2         0.08           PROC3         TRA Workers 3.0         Dermal: acute, local systemic         0.12 mg/cm2         0.08           PROC5, Solid mixture         TRA Workers 3.0         Inhalation: long-term, systemic         1.47 mg/m³         0.49           PROC5         TRA Workers 3.0         Inhalation: short-term, systemic         5.89 mg/m³         0.33           PROC5         TRA Workers         Dermal: long-term, one systemic         0.82 mg/kg bw/day         0.31	PROC19	TRA Workers			0.05 mg/cm2	0.03
PROC3         TRA Workers 3.0         Inhalation: short-term, systemic         5.05 mg/m³         0.28           PROC3         TRA Workers 3.0         Dermal: long-term, systemic         0.41 mg/kg bw/day         0.15           PROC3         TRA Workers 3.0         Chronic dermal local exposure         0.12 mg/cm2         0.08           PROC3         TRA Workers 3.0         Dermal: acute, local acute, local systemic         0.12 mg/cm2         0.08           PROC5, Solid mixture         TRA Workers 3.0         Worker (Industrial)         Inhalation: long-term, systemic         1.47 mg/m³         0.49           PROC5         TRA Workers 3.0         Inhalation: short-term, systemic         5.89 mg/m³         0.33           PROC5         TRA Workers         Dermal: long-term, one mail long-term,	PROC3, Solid mixture	TRA Workers			1.26 mg/m³	0.42
PROC3         TRA Workers 3.0         Dermal: long-term, systemic         0.41 mg/kg bw/day         0.15           PROC3         TRA Workers 3.0         Chronic dermal local exposure         0.12 mg/cm2         0.08           PROC3         TRA Workers 3.0         Dermal: acute, local acute, local systemic         0.12 mg/cm2         0.08           PROC5, Solid mixture         TRA Workers 3.0         Inhalation: long-term, systemic         1.47 mg/m³         0.49           PROC5         TRA Workers 3.0         Inhalation: short-term, systemic         5.89 mg/m³         0.33           PROC5         TRA Workers         Dermal: long-term, one systemic         0.82 mg/kg bw/day         0.31	PROC3	TRA Workers	triary	Inhalation: short-term,	5.05 mg/m³	0.28
PROC3         TRA Workers 3.0         Chronic dermal local exposure         0.12 mg/cm2         0.08           PROC3         TRA Workers 3.0         Dermal: acute, local acute, local 3.0         0.12 mg/cm2         0.08           PROC5, Solid mixture         TRA Workers 3.0         Inhalation: long-term, systemic         1.47 mg/m³         0.49           PROC5         TRA Workers 3.0         Inhalation: short-term, systemic         5.89 mg/m³         0.33           PROC5         TRA Workers         Dermal: long-term, 0.82 mg/kg bw/day         0.31	PROC3	TRA Workers		Dermal: long-term,	0.41 mg/kg bw/day	0.15
PROC3         TRA Workers 3.0         Dermal: acute, local 3.0         0.12 mg/cm2         0.08           PROC5, Solid mixture         TRA Workers 3.0         Worker (Industrial)         Inhalation: long-term, systemic         1.47 mg/m³         0.49           PROC5         TRA Workers 3.0         Inhalation: short-term, systemic         5.89 mg/m³         0.33           PROC5         TRA Workers         Dermal: long-term, 0.82 mg/kg bw/day         0.31	PROC3	TRA Workers		Chronic dermal local	0.12 mg/cm2	0.08
PROC5, Solid mixture     TRA Workers 3.0     Worker (Indussystemic)     Inhalation: long-term, systemic     1.47 mg/m³     0.49       PROC5     TRA Workers 3.0     Inhalation: short-term, systemic     5.89 mg/m³     0.33       PROC5     TRA Workers     Dermal: long-term, 0.82 mg/kg bw/day     0.31	PROC3	TRA Workers			0.12 mg/cm2	0.08
3.0   trial   systemic	PROC5, Solid mixture		Worker (Indus-	Inhalation: long-term.	1.47 mg/m³	0.49
3.0         systemic           PROC5         TRA Workers         Dermal: long-term, 0.82 mg/kg bw/day 0.31	·	3.0	,	systemic	· ·	
		3.0		systemic		
1 2/222000	PROC5	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31

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PROC5	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC2, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC2	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m <sup>3</sup>	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC9, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC8b, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.25 mg/m³	0.08
PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	0.98 mg/m <sup>3</sup>	0.06
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC14, PROC15, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC14, PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC14, PROC15	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.34 mg/kg bw/d	<= 0.13
PROC14, PROC15	TRA Workers 3.0		Chronic dermal local exposure	<= 0.05 mg/cm2	<= 0.03
PROC14, PROC15	TRA Workers 3.0		Dermal: acute, local	<= 0.05 mg/cm2	<= 0.03
PROC19, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC19	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

according to Regulation (EC) No. 1907/2006



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

EUSES = EUSES version 2.1.1

according to Regulation (EC) No. 1907/2006



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# ES 4: Formulation of Cosmetics: low viscosity liquids (Shampoo, hair conditioner, shower gel, foam bath) (medium scale), body care soap (medium scale) Cosmetics Europe / COLIPA

#### 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

PC39: Cosmetics, personal care products

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

**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 con-

tainers (dedicated filling line, including weighing)

PROC14: Production of preparations or articles by tabletting,

compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

Environmental Release Categories

Further information

: **ERC2:** Formulation of preparations

: Cosmetics Europe / COLIPA

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 407 t

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa- : 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 % Emission or Release Factor: Water : 0.2 % Emission or Release Factor: Soil : 0.0 %

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Technical conditions and measures / Organizational measures

: All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

plant effluent

: 87.7 % Effectiveness (of a measure)

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

: 2,000 m3/d

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

: Covers the percentage of the substance in the product up to

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

Physical Form (at time of use)

: Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

Activity : Process sampling

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**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in :

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 2

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

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Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

Product characteristics

: Covers the percentage of the substance in the product up to Concentration of the Substance in

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Mixture/Article

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

#### 2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, **Solid mixture**

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

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Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

: Process sampling Activity

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use)

: Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

#### 2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

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# 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.02 mg/l	0.88
			Fresh water sedi- ment		0.20 mg/kg dry weight	0.88
			Marine water		0.002 mg/l	0.88
			Marine sediment		0.02 mg/kg dry weight	0.88
			Sewage treatment plant		0.20 mg/l	0.02
			Soil		0.03 mg/kg dry weight	0.85

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific condi- tions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m <sup>3</sup>	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m <sup>3</sup>	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m <sup>3</sup>	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m <sup>3</sup>	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers 3.0		Inhalation: short-term, systemic	8.41 mg/cm2	0.47
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.20 mg/kg bw/day	0.08
PROC15	TRA Workers		Chronic dermal local	0.06 mg/cm2	0.04

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PROC15	3.0 TRA Workers		exposure Dermal: acute, local	0.06 mg/cm2	0.04
PROC2, Liquid mix-	3.0 TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
ture PROC2	TRA Workers	lilai)	Inhalation: short-term,	2.81 mg/m³	0.16
PROC2	3.0 TRA Workers 3.0		systemic  Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC8b, PROC9, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m³	<= 0.23
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC15	TRA Workers 3.0	, ,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/kg bw/d	0.01
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC15	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC19, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC19	TRA Workers 3.0	, ,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
PROC3, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.26 mg/m³	0.42
PROC3	TRA Workers 3.0	inal)	Inhalation: short-term, systemic	5.05 mg/m³	0.28
PROC3	TRA Workers 3.0		Dermal: long-term, systemic	0.41 mg/kg bw/day	0.15
PROC3	TRA Workers 3.0		Chronic dermal local exposure	0.12 mg/cm2	0.08
PROC3	TRA Workers 3.0		Dermal: acute, local	0.12 mg/cm2	0.08
PROC5, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
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Version 4.0	Re	evision Date 18.	11.2019 D	ate of last issue: 02	.10.2014
PROC2, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC2	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m <sup>3</sup>	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC9, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC8b, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.25 mg/m <sup>3</sup>	0.08
PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	0.98 mg/m³	0.06
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC14, PROC15, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC14, PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC14, PROC15	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.34 mg/kg bw/d	<= 0.13
PROC14, PROC15	TRA Workers 3.0		Chronic dermal local exposure	<= 0.05 mg/cm2	<= 0.03
PROC14, PROC15	TRA Workers 3.0		Dermal: acute, local	<= 0.05 mg/cm2	<= 0.03
PROC19, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC19	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m <sup>3</sup>	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
				•	

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

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

according to Regulation (EC) No. 1907/2006



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EUSES = EUSES version 2.1.1

according to Regulation (EC) No. 1907/2006



# **Ethyllinalool**

Version 4.0 Revision Date 18.11.2019 Date of last issue: 02.10.2014

#### ES 5: Formulation of Cosmetics: low viscosity liquids (Shampoo, hair conditioner, shower gel, foam bath) (small scale) Cosmetics Europe / COLIPA

#### 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

: **PC28:** Perfumes, fragrances Chemical product category

PC39: Cosmetics, personal care products

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

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 con-

tainers (dedicated filling line, including weighing)

**PROC14:** Production of preparations or articles by tabletting,

compression, extrusion, pelletisation PROC15: Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

Environmental Release Categories

: **ERC2:** Formulation of preparations Further information : Cosmetics Europe / COLIPA

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) 203.9 t

Remarks Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa-: 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 %

> MSDS\_GB / EN 48 / 234

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Emission or Release Factor: Water : 0.4 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

: 2,000 m3/d

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article 25

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity : Process sampling

**Product characteristics** 

: Covers the percentage of the substance in the product up to

Mixture/Article

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Concentration of the Substance in

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

according to Regulation (EC) No. 1907/2006



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Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 9

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

according to Regulation (EC) No. 1907/2006



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Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

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#### Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

25 %.

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

# 2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

: Process sampling Activity

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

#### 2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

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Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)

### 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.02 mg/l	0.88
			Fresh water sedi-		0.20 mg/kg dry	0.88
			ment		weight	
			Marine water		0.02 mg/l	0.88
			Marine sediment		0.02 mg/kg dry weight	0.88
			Sewage treatment plant		0.2 mg/l	0.02
			Soil		0.03 mg/kg dry weight	0.85

#### Workers

Contributing Scenario	Exposure	Specific condi-	Value	Level of Exposure	RCR
Contributing Scenario	Assessment Method	tions	value	Level of Exposure	KCK
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m³	0.01
PROC1	TRA Workers 3.0	·	Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0	·	Inhalation: short-term, systemic	5.05 mg/m <sup>3</sup>	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0	·	Inhalation: short-term, systemic	5.89 mg/m <sup>3</sup>	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	8.41 mg/cm2	0.47
PROC15	TRA Workers		Dermal: long-term,	0.20 mg/kg bw/day	0.08

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	3.0		systemic		
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.06 mg/cm2	0.04
PROC15	TRA Workers 3.0		Dermal: acute, local	0.06 mg/cm2	0.04
PROC2, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC2	TRA Workers 3.0	, ,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC8b, PROC9, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/kg bw/d	0.01
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC15	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC19, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC19	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
PROC3, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.26 mg/m³	0.42
PROC3	TRA Workers 3.0	, , ,	Inhalation: short-term, systemic	5.05 mg/m³	0.28
PROC3	TRA Workers 3.0		Dermal: long-term, systemic	0.41 mg/kg bw/day	0.15
PROC3	TRA Workers 3.0		Chronic dermal local exposure	0.12 mg/cm2	0.08
PROC3	TRA Workers 3.0		Dermal: acute, local	0.12 mg/cm2	0.08
PROC5, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5	TRA Workers		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08

according to Regulation (EC) No. 1907/2006



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TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
TRA Workers 3.0	,	Inhalation: short-term,	2.81 mg/m³	0.16
TRA Workers		Dermal: long-term,	0.14 mg/kg bw/day	0.05
TRA Workers		Chronic dermal local	0.02 mg/cm2	0.01
TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
TRA Workers 3.0	,	Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
TRA Workers 3.0		Dermal: long-term, systemic		<= 0.51
3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.25 mg/m³	0.08
TRA Workers 3.0	,	Inhalation: short-term, systemic	0.98 mg/m³	0.06
TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
3.0		Dermal: acute, local	0.1 mg/cm2	0.06
3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
3.0		Inhalation: short-term, systemic	_	0.55
3.0		systemic	bw/d	<= 0.13
3.0		Chronic dermal local exposure	<= 0.05 mg/cm2	<= 0.03
3.0		Dermal: acute, local	<= 0.05 mg/cm2	<= 0.03
TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m³	0.16
TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
	TRA Workers 3.0 TRA Workers	TRA Workers 3.0	TRA Workers 3.0 TRA Workers 4.0 TRA Workers 5.0 TRA Workers 5.0 TRA Workers 5.0 TRA Workers 6.0 TRA Workers 7.0 TRA Workers 7.0 TRA Workers 8.0 TRA Workers 9.0 TRA Workers 9.0 TRA Workers 1.0 TRA Workers 1.	TRA Workers

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

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

MSDS GB/EN 56 / 234

according to Regulation (EC) No. 1907/2006



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EUSES = EUSES version 2.1.1



# Ethyllinalool 5011728

Version 4.0 Revision Date 18.11.2019 Date of last issue: 02.10.2014

# ES 6: Formulation of Cosmetics: Medium Viscosity Body Care Products (medium scale), Non-liquid Creams (skin care, body care, mascara, solar oil, make-up foundation) (large scale) Cosmetics Europe / COLIPA

#### 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

PC39: Cosmetics, personal care products

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

**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 con-

tainers (dedicated filling line, including weighing)

PROC14: Production of preparations or articles by tabletting,

compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

Environmental Release Categories

Further information

: **ERC2:** Formulation of preparations

: Cosmetics Europe / COLIPA

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 81.9 t

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa-

: 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

according to Regulation (EC) No. 1907/2006



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Emission or Release Factor: Air : 0.0 % Emission or Release Factor: Water : 1 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

plant effluent

: 2,000 m3/d

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

according to Regulation (EC) No. 1907/2006



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# 2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

Activity : Process sampling

Product characteristics

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

# 2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

according to Regulation (EC) No. 1907/2006



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**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Solid mixture

according to Regulation (EC) No. 1907/2006



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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

62 / 234 MSDS GB / EN

: Covers percentage substance in the product up to 1 %.

according to Regulation (EC) No. 1907/2006



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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

according to Regulation (EC) No. 1907/2006



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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)

#### 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.02 mg/l	0.89
			Fresh water sedi- ment		0.20 mg/kg dry weight	0.89
			Marine water		0.002 mg/l	0.89
			Marine sediment		0.02 mg/kg dry weight	0.89
			Sewage treatment plant		0.20 mg/l	0.02
			Soil		0.03 mg/kg dry weight	0.85

#### **Workers**

Contributing Scenario	Exposure Assessment Method	Specific condi- tions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m³	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m <sup>3</sup>	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers		Inhalation: short-term,	8.41 mg/cm2	0.47

according to Regulation (EC) No. 1907/2006



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PROC15	3.0 TRA Workers		systemic Dermal: long-term,	0.20 mg/kg bw/day	0.08
	3.0		systemic		
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.06 mg/cm2	0.04
PROC15	TRA Workers 3.0		Dermal: acute, local	0.06 mg/cm2	0.04
PROC2, Liquid mix-	TRA Workers	Worker (Indus-	Inhalation: long-term,	0.70 mg/m³	0.23
ture	3.0	trial)	systemic	· ·	
PROC2	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers		Dermal: acute, local	0.02 mg/cm2	0.01
DDOO4 DDOOG-	3.0	\M = al. = a /l. = al =	Inhalation Inna town	0.70/2	0.00
PROC4, PROC8a, PROC8b, PROC9, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a,	TRA Workers		Inhalation: short-term,	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC8b, PROC9	3.0		systemic	ŭ	
PROC4, PROC8a,	TRA Workers		Dermal: long-term,	<= 1.37 mg/kg	<= 0.51
PROC8b, PROC9	3.0		systemic	bw/day	
PROC4, PROC8a,	TRA Workers		Chronic dermal local	0.1 mg/cm2	0.06
PROC8b, PROC9	3.0		exposure		
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC15	TRA Workers	,	Inhalation: short-term,	9.82 mg/m <sup>3</sup>	0.55
	3.0		systemic		
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/kg bw/d	0.01
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC15	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC19, Liquid mix-	TRA Workers	Worker (Indus-	Inhalation: long-term,	0.70 mg/m³	0.23
ture	3.0	trial)	systemic		
PROC19	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers		Dermal: acute, local	0.05 mg/cm2	0.03
PROC3, Solid mixture	3.0 TRA Workers	Worker (Indus-	Inhalation: long-term,	1.26 mg/m³	0.42
·	3.0	trial)	systemic		
PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m³	0.28
PROC3	TRA Workers 3.0		Dermal: long-term, systemic	0.41 mg/kg bw/day	0.15
PROC3	TRA Workers 3.0		Chronic dermal local exposure	0.12 mg/cm2	0.08
PROC3	TRA Workers		Dermal: acute, local	0.12 mg/cm2	0.08
PROC5, Solid mixture	3.0 TRA Workers	Worker (Indus-	Inhalation: long-term,	1.47 mg/m³	0.49
PROC5	3.0 TRA Workers	trial)	systemic Inhalation: short-term,	5.89 mg/m³	0.33
	3.0		systemic		
PROC5	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31

according to Regulation (EC) No. 1907/2006



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PROC5	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC2, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC2	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC9, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC8b, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.25 mg/m <sup>3</sup>	0.08
PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	0.98 mg/m³	0.06
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC14, PROC15, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC14, PROC15	TRA Workers 3.0		Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC14, PROC15	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.34 mg/kg bw/d	<= 0.13
PROC14, PROC15	TRA Workers 3.0		Chronic dermal local exposure	<= 0.05 mg/cm2	<= 0.03
PROC14, PROC15	TRA Workers 3.0		Dermal: acute, local	<= 0.05 mg/cm2	<= 0.03
PROC19, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC19	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

according to Regulation (EC) No. 1907/2006



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

EUSES = EUSES version 2.1.1

according to Regulation (EC) No. 1907/2006



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#### ES 7: Formulation of Cosmetics: Non-liquid Creams (skin care, body care, mascara, solar oil, make-up foundation) (small scale) Cosmetics Europe / COLIPA

#### 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

: **PC28:** Perfumes, fragrances Chemical product category

PC39: Cosmetics, personal care products

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

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 con-

tainers (dedicated filling line, including weighing)

**PROC14:** Production of preparations or articles by tabletting,

compression, extrusion, pelletisation PROC15: Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

**Environmental Release Categories** 

: **ERC2:** Formulation of preparations Further information : Cosmetics Europe / COLIPA

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) 20.3 t

Remarks Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa-: 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 %

> MSDS\_GB / EN 68 / 234

according to Regulation (EC) No. 1907/2006



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Emission or Release Factor: Water : 4 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant : 2,000 m3/d

Flow rate of sewage treatment

plant effluent

Effectiveness (of a measure) : 87.7 %

: Can be applied on agricultural soil, when in compliance with Sludge Treatment

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

: Liquid mixture Physical Form (at time of use)

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

: Process sampling Activity

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

> MSDS GB/EN 69 / 234

according to Regulation (EC) No. 1907/2006



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Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 9

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

according to Regulation (EC) No. 1907/2006



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Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

according to Regulation (EC) No. 1907/2006



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#### Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

**Product characteristics** 

Mixture/Article

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

# 2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

according to Regulation (EC) No. 1907/2006



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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

# 2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

: Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Physical Form (at time of use)

Mixture/Article

Frequency and duration of use
Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

#### 2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

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Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)

## 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.02 mg/l	0.88
			Fresh water sedi-		0.20 mg/kg dry	0.88
			ment		weight	
			Marine water		0.002 mg/l	0.88
			Marine sediment		0.02 mg/kg dry weight	0.88
			Sewage treatment plant		0.2 mg/l	0.02
			Soil		0.03 mg/kg dry weight	0.85

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m³	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	8.41 mg/cm2	0.47
PROC15	TRA Workers		Dermal: long-term,	0.20 mg/kg bw/day	0.08

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	3.0		systemic		
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.06 mg/cm2	0.04
PROC15	TRA Workers 3.0		Dermal: acute, local	0.06 mg/cm2	0.04
PROC2, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC2	TRA Workers 3.0	, ,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC8b, PROC9, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/kg bw/d	0.01
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC15	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC19, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC19	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
PROC3, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.26 mg/m³	0.42
PROC3	TRA Workers 3.0	, , ,	Inhalation: short-term, systemic	5.05 mg/m³	0.28
PROC3	TRA Workers 3.0		Dermal: long-term, systemic	0.41 mg/kg bw/day	0.15
PROC3	TRA Workers 3.0		Chronic dermal local exposure	0.12 mg/cm2	0.08
PROC3	TRA Workers 3.0		Dermal: acute, local	0.12 mg/cm2	0.08
PROC5, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5	TRA Workers		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08

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PROC5 TRA Workers Dermal: acute, local <= 0.12 mg/cm2 <= 0.08 3.0 PROC2, Solid mixture TRA Workers Worker (Indus-Inhalation: long-term, 0.70 mg/m<sup>3</sup> 0.23 3.0 trial) systemic PROC2 TRA Workers Inhalation: short-term, 2.81 mg/m<sup>3</sup> 0.16 3.0 systemic PROC2 TRA Workers 0.14 mg/kg bw/day 0.05 Dermal: long-term, systemic 3.0 PROC2 TRA Workers 0.02 mg/cm2 0.01 Chronic dermal local 3.0 exposure PROC2 TRA Workers 0.02 mg/cm2 0.01 Dermal: acute, local 3.0 PROC4, PROC8a, TRA Workers Worker (Indus- $<= 0.70 \text{ mg/m}^3$ <= 0.23 Inhalation: long-term, PROC9, Solid mixture trial) 3.0 systemic TRA Workers PROC4, PROC8a, Inhalation: short-term,  $<= 2.81 \text{ mg/m}^3$ <= 0.16 PROC9 3.0 systemic <= 1.37 mg/kg PROC4, PROC8a, TRA Workers Dermal: long-term, <= 0.51 PROC9 bw/day 3.0 systemic PROC4, PROC8a, TRA Workers Chronic dermal local 0.1 mg/cm2 0.06 PROC9 3.0 exposure PROC4, PROC8a, TRA Workers Dermal: acute, local <= 0.1 mg/cm2 <= 0.06 PROC9 3.0 PROC8b, Solid mix-TRA Workers Worker (Indus-Inhalation: long-term, 0.25 mg/m<sup>3</sup> 0.08 ture 3.0 trial) systemic PROC8b TRA Workers 0.98 mg/m<sup>3</sup> 0.06 Inhalation: short-term, systemic 3.0 PROC8b TRA Workers 1.37 mg/kg bw/day 0.51 Dermal: long-term, 3.0 systemic PROC8b TRA Workers Chronic dermal local 0.1 mg/cm2 0.06 3.0 exposure PROC8b TRA Workers 0.1 mg/cm2 0.06 Dermal: acute, local 3.0 PROC14, PROC15, TRA Workers Worker (Indus-2.45 mg/m<sup>3</sup> 0.82 Inhalation: long-term, Solid mixture trial) systemic 3.0 PROC14, PROC15 TRA Workers Inhalation: short-term, 9.82 mg/m<sup>3</sup> 0.55 3.0 systemic PROC14, PROC15 TRA Workers Dermal: long-term, <= 0.34 mg/kg <= 0.13 3.0 systemic bw/d PROC14, PROC15 TRA Workers Chronic dermal local <= 0.05 mg/cm2 <= 0.03 3.0 exposure PROC14, PROC15 TRA Workers Dermal: acute, local <= 0.05 mg/cm2 <= 0.03 3.0 PROC19, Solid mix-Inhalation: long-term, TRA Workers Worker (Indus-0.70 mg/m<sup>3</sup> 0.23 systemic 3.0 trial) ture PROC19 TRA Workers Inhalation: short-term, 2.81 mg/m<sup>3</sup> 0.16 3.0 systemic PROC19 1.41 mg/kg bw/d TRA Workers Dermal: long-term, 0.52 3.0 systemic PROC19 0.05 mg/cm2 TRA Workers Chronic dermal local 0.03 3.0 exposure TRA Workers PROC19 Dermal: acute, local 0.05 mg/cm2 0.03 3.0

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

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

according to Regulation (EC) No. 1907/2006



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EUSES = EUSES version 2.1.1



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ES 8: Cosmetics Europe / COLIPA Formulation of Cosmetics: Fine Fragrances - Cleaning with Water (medium scale), Medium Viscosity Body Care Products (small scale), Non-liquid Creams (skin care, body care, mascara, solar oil, make-up foundation) (medium scale)

#### 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

PC39: Cosmetics, personal care products

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

**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 con-

tainers (dedicated filling line, including weighing)

PROC14: Production of preparations or articles by tabletting,

compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

Environmental Release Categories

Further information

: **ERC2:** Formulation of preparations

: Cosmetics Europe / COLIPA

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 40

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa- : 18,000 m3/d

ter

according to Regulation (EC) No. 1907/2006



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Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 % Emission or Release Factor: Water : 2 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

: 2,000 m3/d

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Mixture/Article

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

MSDS\_GB / EN 79 / 234

according to Regulation (EC) No. 1907/2006



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#### 2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article Physical Form (at time of use)

: Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

## 2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

MSDS GB/EN 80 / 234

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**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Solid mixture

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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

82 / 234 MSDS GB / EN

: Covers percentage substance in the product up to 1 %.

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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

Product characteristics

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

# 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess-	Specific conditions	Compartment	Value	Level of Exposure	RCR
000.10.10	ment Meth- od	00.10.10			(PEC)	
ERC2	EUSES		Fresh water		0.02 mg/l	0.88
			Fresh water sedi-		0.20 mg/kg dry	0.88
			ment		weight	
			Marine water		0.002 mg/l	0.88
			Marine sediment		0.02 mg/kg dry	0.88
					weight	
			Sewage treatment		0.20 mg/l	0.02
			plant		_	
			Soil		0.03 mg/kg dry weight	0.85

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific condi- tions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m³	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m <sup>3</sup>	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers		Inhalation: short-term,	8.41 mg/cm2	0.47

according to Regulation (EC) No. 1907/2006



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Version 4.0 **Revision Date 18.11.2019** Date of last issue: 02.10.2014 3.0 systemic PROC15 0.20 mg/kg bw/day TRA Workers Dermal: long-term, 0.08 systemic 3.0 PROC15 TRA Workers 0.06 mg/cm2 0.04 Chronic dermal local 3.0 exposure PROC15 TRA Workers Dermal: acute, local 0.06 mg/cm2 0.04 3.0 Worker (Indus-PROC2, Liquid mix-TRA Workers Inhalation: long-term, 0.70 mg/m<sup>3</sup> 0.23 ture 3.0 trial) systemic PROC2 TRA Workers Inhalation: short-term, 2.81 mg/m<sup>3</sup> 0.16 3.0 systemic PROC2 TRA Workers 0.14 mg/kg bw/day 0.05 Dermal: long-term, systemic 3.0 PROC2 TRA Workers Chronic dermal local 0.02 mg/cm2 0.01 3.0 exposure PROC2 TRA Workers 0.02 mg/cm2 0.01 Dermal: acute, local 3.0 PROC4, PROC8a, TRA Workers Worker (Indus-Inhalation: long-term,  $<= 0.70 \text{ mg/m}^3$ <= 0.23 PROC8b, PROC9, 3.0 trial) systemic Liquid mixture PROC4, PROC8a, TRA Workers Inhalation: short-term,  $<= 2.81 \text{ mg/m}^3$ <= 0.16 PROC8b, PROC9 3.0 systemic <= 1.37 mg/kg <= 0.51 PROC4. PROC8a. TRA Workers Dermal: long-term, PROC8b, PROC9 systemic bw/day 3.0 PROC4, PROC8a, TRA Workers 0.06 Chronic dermal local 0.1 mg/cm2 PROC8b. PROC9 3.0 exposure PROC4, PROC8a, TRA Workers Dermal: acute, local <= 0.1 mg/cm2 <= 0.06 PROC8b, PROC9 3.0 PROC15, Liquid mix-TRA Workers Worker (Indus-2.45 mg/m<sup>3</sup> Inhalation: long-term, 0.82 ture 3.0 trial) systemic PROC15 TRA Workers Inhalation: short-term, 9.82 mg/m<sup>3</sup> 0.55 3.0 systemic PROC15 TRA Workers 0.03 mg/kg bw/d 0.01 Dermal: long-term, 3.0 systemic PROC15 TRA Workers Chronic dermal local 0.01 mg/cm2 < 0.01 3.0 exposure PROC15 TRA Workers Dermal: acute, local 0.01 mg/cm2 < 0.01 3.0 PROC19, Liquid mix-TRA Workers Worker (Indus-Inhalation: long-term, 0.70 mg/m<sup>3</sup> 0.23 ture 3.0 trial) systemic PROC19 2.81 mg/m<sup>3</sup> TRA Workers Inhalation: short-term, 0.16 systemic 3.0 PROC19 0.52 TRA Workers Dermal: long-term, 1.41 mg/kg bw/d systemic 3.0 PROC19 TRA Workers Chronic dermal local 0.05 mg/cm2 0.03 3.0 exposure PROC19 TRA Workers 0.05 mg/cm2 0.03 Dermal: acute, local 3.0 PROC3. Solid mixture TRA Workers Worker (Indus-Inhalation: long-term, 1.26 mg/m<sup>3</sup> 0.42 trial) systemic 3.0 TRA Workers PROC3 Inhalation: short-term, 5.05 mg/m<sup>3</sup> 0.28 3.0 systemic PROC3 TRA Workers Dermal: long-term, 0.41 mg/kg bw/day 0.15 systemic 3.0 PROC3 0.12 mg/cm2 0.08 TRA Workers Chronic dermal local 3.0 exposure TRA Workers PROC3 Dermal: acute, local 0.12 mg/cm2 0.08 3.0 Worker (Indus-PROC5, Solid mixture Inhalation: long-term, 1.47 mg/m<sup>3</sup> 0.49 TRA Workers 3.0 trial) systemic PROC5 5.89 mg/m<sup>3</sup> 0.33 TRA Workers Inhalation: short-term, 3.0 systemic PROC5 TRA Workers Dermal: long-term, 0.82 mg/kg bw/day 0.31 3.0 systemic

according to Regulation (EC) No. 1907/2006



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PROC5	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC2, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC2	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC9, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC8b, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.25 mg/m³	0.08
PROC8b	TRA Workers 3.0	,	Inhalation: short-term, systemic	0.98 mg/m³	0.06
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC14, PROC15, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC14, PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC14, PROC15	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.34 mg/kg bw/d	<= 0.13
PROC14, PROC15	TRA Workers 3.0		Chronic dermal local exposure	<= 0.05 mg/cm2	<= 0.03
PROC14, PROC15	TRA Workers 3.0		Dermal: acute, local	<= 0.05 mg/cm2	<= 0.03
PROC19, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC19	TRA Workers 3.0	/	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

according to Regulation (EC) No. 1907/2006



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

EUSES = EUSES version 2.1.1



# **Ethyllinalool**

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## ES 9: Cosmetics Europe / COLIPA Formulation of Cosmetics: Fine Fragrances - Cleaning with Water (small scale)

#### 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

: **PC28:** Perfumes, fragrances Chemical product category

PC39: Cosmetics, personal care products

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

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 con-

tainers (dedicated filling line, including weighing)

**PROC14:** Production of preparations or articles by tabletting,

compression, extrusion, pelletisation PROC15: Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

Environmental Release Categories

: **ERC2:** Formulation of preparations Further information : Cosmetics Europe / COLIPA

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) 21.7 t

Remarks Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa-: 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 %

> MSDS\_GB / EN 88 / 234

according to Regulation (EC) No. 1907/2006



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Emission or Release Factor: Water : 1.5 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

: 2,000 m3/d

plant effluent

Effectiveness (of a measure) : 87.7 %

: Can be applied on agricultural soil, when in compliance with Sludge Treatment

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

Mixture/Article

25 %.

: Liquid mixture Physical Form (at time of use)

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

: Process sampling Activity

**Product characteristics** 

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

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Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 9

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

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Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25

25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

: Process sampling Activity

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Mixture/Article

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

#### 2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

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Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)

## 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.01 mg/l	0.44
			Fresh water sedi-		0.01 mg/kg dry	0.45
			ment		weight	
			Marine water		0.001 mg/l	0.44
			Marine sediment		0.01 mg/kg dry weight	0.44
			Sewage treatment plant		0.1 mg/l	0.01
			Soil		0.01 mg/kg dry weight	0.42

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m³	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m³	0.70
PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	8.41 mg/cm2	0.47
PROC15	TRA Workers		Dermal: long-term,	0.20 mg/kg bw/day	0.08

according to Regulation (EC) No. 1907/2006



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	3.0		systemic		
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.06 mg/cm2	0.04
PROC15	TRA Workers 3.0		Dermal: acute, local	0.06 mg/cm2	0.04
PROC2, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC2	TRA Workers 3.0	, ,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC8b, PROC9, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/kg bw/d	0.01
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC15	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC19, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC19	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
PROC3, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.26 mg/m³	0.42
PROC3	TRA Workers 3.0	, , ,	Inhalation: short-term, systemic	5.05 mg/m³	0.28
PROC3	TRA Workers 3.0		Dermal: long-term, systemic	0.41 mg/kg bw/day	0.15
PROC3	TRA Workers 3.0		Chronic dermal local exposure	0.12 mg/cm2	0.08
PROC3	TRA Workers 3.0		Dermal: acute, local	0.12 mg/cm2	0.08
PROC5, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5	TRA Workers		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08

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TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
TRA Workers 3.0	,	Inhalation: short-term,	2.81 mg/m³	0.16
TRA Workers		Dermal: long-term,	0.14 mg/kg bw/day	0.05
TRA Workers		Chronic dermal local	0.02 mg/cm2	0.01
TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
TRA Workers 3.0	,	Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
TRA Workers 3.0		Dermal: long-term, systemic		<= 0.51
3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.25 mg/m³	0.08
TRA Workers 3.0	,	Inhalation: short-term, systemic	0.98 mg/m³	0.06
TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
3.0		Dermal: acute, local	0.1 mg/cm2	0.06
3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
3.0		Inhalation: short-term, systemic	_	0.55
3.0		systemic	bw/d	<= 0.13
3.0		Chronic dermal local exposure	<= 0.05 mg/cm2	<= 0.03
3.0		Dermal: acute, local	<= 0.05 mg/cm2	<= 0.03
TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m³	0.16
TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
	TRA Workers 3.0 TRA Workers	TRA Workers 3.0	TRA Workers 3.0 TRA Workers 4.0 TRA Workers 5.0 TRA Workers 5.0 TRA Workers 5.0 TRA Workers 6.0 TRA Workers 7.0 TRA Workers 7.0 TRA Workers 8.0 TRA Workers 9.0 TRA Workers 9.0 TRA Workers 1.0 TRA Workers 1.	TRA Workers

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

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

according to Regulation (EC) No. 1907/2006



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EUSES = EUSES version 2.1.1



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ES 10: Cosmetics Europe / COLIPA Formulation of cosmetic products involving cleaning with Organic Solvents (Varnish / Removers, Decorative Cosmetics, Spray, Lacquer, Fine Fragrance, Solar oil, solid products)

#### 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

PC39: Cosmetics, personal care products

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

**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 con-

tainers (dedicated filling line, including weighing)

PROC14: Production of preparations or articles by tabletting,

compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

Environmental Release Categories

Further information

: **ERC2:** Formulation of preparations

: Cosmetics Europe / COLIPA

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 100 kg

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa-

: 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

according to Regulation (EC) No. 1907/2006



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Emission or Release Factor: Air : 0.0 % Emission or Release Factor: Water : 0.0 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

: 2,000 m3/d

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

Mixture/Article

25 %.: Liquid mixture

Frequency and duration of use

Physical Form (at time of use)

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity : Process sampling

**Product characteristics** 

. Frocess sampling

Concentration of the Substance in Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

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#### 2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

### 2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

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**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Cov

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Solid mixture

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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

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#### Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

Activity : Process sampling

Product characteristics

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

# 2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

## 2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

# 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.0002 mg/l	< 0.01
			Fresh water sedi-		0.002 mg/kg dry	< 0.01
			ment		weight	
			Marine water		0.00002 mg/l	< 0.01
			Marine sediment		0.0002 mg/kg dry	< 0.01
					weight	
			Sewage treatment		0 mg/l	< 0.01
			plant			
			Soil		0.00001 mg/kg dry	< 0.01
					weight	

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific condi- tions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m³	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m <sup>3</sup>	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers		Inhalation: short-term,	8.41 mg/cm2	0.47

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	3.0		systemic		
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.20 mg/kg bw/day	0.08
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.06 mg/cm2	0.04
PROC15	TRA Workers 3.0		Dermal: acute, local	0.06 mg/cm2	0.04
PROC2, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC2	TRA Workers 3.0	, ,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC8b, PROC9, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/kg bw/d	0.01
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC15	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC19, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC19	TRA Workers 3.0	, ,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
PROC3, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.26 mg/m³	0.42
PROC3	TRA Workers 3.0	,	Inhalation: short-term, systemic	5.05 mg/m³	0.28
PROC3	TRA Workers 3.0		Dermal: long-term, systemic	0.41 mg/kg bw/day	0.15
PROC3	TRA Workers 3.0		Chronic dermal local exposure	0.12 mg/cm2	0.08
PROC3	TRA Workers 3.0		Dermal: acute, local	0.12 mg/cm2	0.08
PROC5, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31

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PROC5	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC2, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC2	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC9, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC8b, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.25 mg/m³	0.08
PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	0.98 mg/m <sup>3</sup>	0.06
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC14, PROC15, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC14, PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC14, PROC15	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.34 mg/kg bw/d	<= 0.13
PROC14, PROC15	TRA Workers 3.0		Chronic dermal local exposure	<= 0.05 mg/cm2	<= 0.03
PROC14, PROC15	TRA Workers 3.0		Dermal: acute, local	<= 0.05 mg/cm2	<= 0.03
PROC19, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC19	TRA Workers 3.0	/	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

according to Regulation (EC) No. 1907/2006



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

EUSES = EUSES version 2.1.1

according to Regulation (EC) No. 1907/2006



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#### ES 11: Cosmetics Europe / COLIPA Formulation of body care soap (small scale)

#### 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

PC39: Cosmetics, personal care products

Process categories : PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

ion)

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)

**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 con-

tainers (dedicated filling line, including weighing)

PROC14: Production of preparations or articles by tabletting,

compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

**Environmental Release Categories** 

Further information

: **ERC2**: Formulation of preparations

: Cosmetics Europe / COLIPA

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 37 t

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa- : 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 % Emission or Release Factor: Water : 0.2 %

according to Regulation (EC) No. 1907/2006



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Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

: Municipal sewage treatment plant Type of Sewage Treatment Plant

Flow rate of sewage treatment

plant effluent

: 2.000 m3/d

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

: Covers the percentage of the substance in the product up to 25 %.

Mixture/Article

Physical Form (at time of use)

: Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

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according to Regulation (EC) No. 1907/2006



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Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

according to Regulation (EC) No. 1907/2006



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Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

> MSDS GB/EN 111 / 234

according to Regulation (EC) No. 1907/2006



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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

according to Regulation (EC) No. 1907/2006



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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in :

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

# 2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

#### 2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

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(Effectiveness (of a measure): 90 %)

#### 3. Exposure estimation and reference to its source

#### **Environment**

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Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.02 mg/l	0.09
			Fresh water sedi-		0.02 mg/kg dry	0.09
			ment		weight	
			Marine water		0.0002 mg/l	0.09
			Marine sediment		0.002 mg/kg dry	0.09
					weight	
			Sewage treatment		0.02 mg/l	< 0.01
			plant			
			Soil		0.002 mg/kg dry weight	0.08

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m <sup>3</sup>	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m <sup>3</sup>	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers 3.0		Inhalation: short-term, systemic	8.41 mg/cm2	0.47
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.20 mg/kg bw/day	0.08

according to Regulation (EC) No. 1907/2006



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PROC15	TRA Workers		Chronic dermal local	0.06 mg/cm2	0.04
	3.0		exposure	· ·	
PROC15	TRA Workers 3.0		Dermal: acute, local	0.06 mg/cm2	0.04
PROC2, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC2	TRA Workers 3.0	iriai)	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC8b, PROC9, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC15	TRA Workers 3.0		Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/kg bw/d	0.01
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC15	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC19, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC19	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
PROC3, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.26 mg/m³	0.42
PROC3	TRA Workers 3.0	,	Inhalation: short-term, systemic	5.05 mg/m <sup>3</sup>	0.28
PROC3	TRA Workers 3.0		Dermal: long-term, systemic	0.41 mg/kg bw/day	0.15
PROC3	TRA Workers 3.0		Chronic dermal local exposure	0.12 mg/cm2	0.08
PROC3	TRA Workers 3.0		Dermal: acute, local	0.12 mg/cm2	0.08
PROC5, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5	TRA Workers 3.0	,	Inhalation: short-term, systemic	5.89 mg/m <sup>3</sup>	0.33
PROC5	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5	TRA Workers		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08

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PROC2, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC2	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m <sup>3</sup>	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC9, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC8b, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.25 mg/m <sup>3</sup>	0.08
PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	0.98 mg/m <sup>3</sup>	0.06
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC14, PROC15, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC14, PROC15	TRA Workers 3.0		Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC14, PROC15	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.34 mg/kg bw/d	<= 0.13
PROC14, PROC15	TRA Workers 3.0		Chronic dermal local exposure	<= 0.05 mg/cm2	<= 0.03
PROC14, PROC15	TRA Workers 3.0		Dermal: acute, local	<= 0.05 mg/cm2	<= 0.03
PROC19, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC19	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

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

according to Regulation (EC) No. 1907/2006



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EUSES = EUSES version 2.1.1



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# ES 12: Formulation of Detergents/Maintenance Products: Granular Regular (large scale), Granular Compact (small scale), Low Viscosity Liquids (large scale) (AISE)

#### 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

PC31: Polishes and wax blends

PC35: Washing and cleaning products (including solvent

based products)

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

**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 con-

tainers (dedicated filling line, including weighing)

**PROC14:** Production of preparations or articles by tabletting,

compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

Environmental Release Categories

Further information

: **ERC2:** Formulation of preparations

Cosmetics Europe / COLIPA

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 850 t

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa-

: 18,000 m3/d

ter

according to Regulation (EC) No. 1907/2006



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Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 % Emission or Release Factor: Water : 0.1 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

: 2,000 m3/d

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Mixture/Article

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

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according to Regulation (EC) No. 1907/2006



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#### 2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

#### 2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

MSDS GB/EN 120 / 234

according to Regulation (EC) No. 1907/2006



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**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Solid mixture

according to Regulation (EC) No. 1907/2006



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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

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#### Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

Activity : Process sampling

Product characteristics

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

# 2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

#### 2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

according to Regulation (EC) No. 1907/2006



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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)

#### 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.02 mg/l	0.92
			Fresh water sedi- ment		0.21 mg/kg dry weight	0.92
			Marine water		0.002 mg/l	0.92
			Marine sediment		0.02 mg/kg dry weight	0.92
			Sewage treatment plant		0.21 mg/l	0.02
			Soil		0.03 mg/kg dry weight	0.88

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m³	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m <sup>3</sup>	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers	·	Inhalation: short-term,	8.41 mg/cm2	0.47

according to Regulation (EC) No. 1907/2006



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			i	l I	
PROC15	3.0 TRA Workers		systemic Dermal: long-term,	0.20 mg/kg bw/day	0.08
	3.0		systemic		
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.06 mg/cm2	0.04
PROC15	TRA Workers 3.0		Dermal: acute, local	0.06 mg/cm2	0.04
PROC2, Liquid mix-	TRA Workers	Worker (Indus-	Inhalation: long-term,	0.70 mg/m³	0.23
ture	3.0	trial)	systemic	· ·	
PROC2	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers		Dermal: acute, local	0.02 mg/cm2	0.01
DDOO4 DDOOG-	3.0	\M = al. = a /l. = al =	Inhalation Inna town	0.70/2	0.00
PROC4, PROC8a, PROC8b, PROC9, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a,	TRA Workers		Inhalation: short-term,	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC8b, PROC9	3.0		systemic	ŭ	
PROC4, PROC8a,	TRA Workers		Dermal: long-term,	<= 1.37 mg/kg	<= 0.51
PROC8b, PROC9	3.0		systemic	bw/day	
PROC4, PROC8a,	TRA Workers		Chronic dermal local	0.1 mg/cm2	0.06
PROC8b, PROC9	3.0		exposure		
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC15	TRA Workers	,	Inhalation: short-term,	9.82 mg/m <sup>3</sup>	0.55
	3.0		systemic		
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/kg bw/d	0.01
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC15	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC19, Liquid mix-	TRA Workers	Worker (Indus-	Inhalation: long-term,	0.70 mg/m <sup>3</sup>	0.23
ture	3.0	trial)	systemic		
PROC19	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers		Dermal: acute, local	0.05 mg/cm2	0.03
PROC3, Solid mixture	3.0 TRA Workers	Worker (Indus-	Inhalation: long-term,	1.26 mg/m³	0.42
·	3.0	trial)	systemic	· ·	
PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m³	0.28
PROC3	TRA Workers 3.0		Dermal: long-term, systemic	0.41 mg/kg bw/day	0.15
PROC3	TRA Workers 3.0		Chronic dermal local exposure	0.12 mg/cm2	0.08
PROC3	TRA Workers		Dermal: acute, local	0.12 mg/cm2	0.08
PROC5, Solid mixture	3.0 TRA Workers	Worker (Indus-	Inhalation: long-term,	1.47 mg/m³	0.49
PROC5	3.0 TRA Workers	trial)	systemic Inhalation: short-term,	5.89 mg/m³	0.33
	3.0		systemic		
PROC5	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31

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PROC5	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC2, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC2	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m <sup>3</sup>	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC9, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC8b, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.25 mg/m³	0.08
PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	0.98 mg/m <sup>3</sup>	0.06
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC14, PROC15, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC14, PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC14, PROC15	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.34 mg/kg bw/d	<= 0.13
PROC14, PROC15	TRA Workers 3.0		Chronic dermal local exposure	<= 0.05 mg/cm2	<= 0.03
PROC14, PROC15	TRA Workers 3.0		Dermal: acute, local	<= 0.05 mg/cm2	<= 0.03
PROC19, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC19	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

according to Regulation (EC) No. 1907/2006



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

EUSES = EUSES version 2.1.1



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# ES 13: (AISE) Formulation of Detergents/Maintenance Products: High Viscosity Liquids (medium scale) Formulation of liquid Detergents/Maintenance Products: High Viscosity (large scale)

#### 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

PC31: Polishes and wax blends

PC35: Washing and cleaning products (including solvent

based products)

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

**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 con-

tainers (dedicated filling line, including weighing)

PROC14: Production of preparations or articles by tabletting,

compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

**Environmental Release Categories** 

Further information

: ERC2: Formulation of preparations: Cosmetics Europe / COLIPA

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 812.9 t

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

**Environment factors not influenced by risk management** 

Flow rate of receiving surface wa- : 18,000 m3/d

ter

according to Regulation (EC) No. 1907/2006



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Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 % Emission or Release Factor: Water : 0.1 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

: All contaminated waste water must be processed in an indus-Water

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment : 2,000 m3/d

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

: Covers the percentage of the substance in the product up to

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

MSDS GB/EN 129 / 234

according to Regulation (EC) No. 1907/2006



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#### 2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

#### 2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

MSDS GB/EN 130 / 234

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**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Solid mixture

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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

132 / 234 MSDS GB / EN

: Covers percentage substance in the product up to 1 %.

according to Regulation (EC) No. 1907/2006



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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

Product characteristics

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

according to Regulation (EC) No. 1907/2006



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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)

#### (Lifectiveness (of a measure). 90 76)

#### 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.02 mg/l	0.88
			Fresh water sedi- ment		0.20 mg/kg dry weight	0.88
			Marine water		0.002 mg/l	0.88
			Marine sediment		0.02 mg/kg dry weight	0.88
			Sewage treatment plant		0.2 mg/l	0.02
			Soil		0.03 mg/kg dry weight	0.85

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific condi- tions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m³	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers	·	Inhalation: short-term,	8.41 mg/cm2	0.47

according to Regulation (EC) No. 1907/2006



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Version 4.0	Re	vision Date 18.	11.2019 D	ate of last issue: 02	.10.2014
	3.0		systemic		
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.20 mg/kg bw/day	0.08
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.06 mg/cm2	0.04
PROC15	TRA Workers 3.0		Dermal: acute, local	0.06 mg/cm2	0.04
PROC2, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC2	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC8b, PROC9, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/kg bw/d	0.01
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC15	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC19, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC19	TRA Workers 3.0	, ,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
PROC3, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.26 mg/m³	0.42
PROC3	TRA Workers 3.0	,	Inhalation: short-term, systemic	5.05 mg/m³	0.28
PROC3	TRA Workers 3.0		Dermal: long-term, systemic	0.41 mg/kg bw/day	0.15
PROC3	TRA Workers 3.0		Chronic dermal local exposure	0.12 mg/cm2	0.08
PROC3	TRA Workers 3.0		Dermal: acute, local	0.12 mg/cm2	0.08
PROC5, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5	TRA Workers 3.0	,	Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31

according to Regulation (EC) No. 1907/2006



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PROC5	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC2, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC2	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m <sup>3</sup>	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC9, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC8b, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.25 mg/m <sup>3</sup>	0.08
PROC8b	TRA Workers 3.0	,	Inhalation: short-term, systemic	0.98 mg/m <sup>3</sup>	0.06
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC14, PROC15, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC14, PROC15	TRA Workers 3.0		Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC14, PROC15	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.34 mg/kg bw/d	<= 0.13
PROC14, PROC15	TRA Workers 3.0		Chronic dermal local exposure	<= 0.05 mg/cm2	<= 0.03
PROC14, PROC15	TRA Workers 3.0		Dermal: acute, local	<= 0.05 mg/cm2	<= 0.03
PROC19, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC19	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

according to Regulation (EC) No. 1907/2006



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

EUSES = EUSES version 2.1.1



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# ES 14: (AISE) Formulation of Detergents/Maintenance Products: High Viscosity Liquids (medium scale)

1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

PC31: Polishes and wax blends

PC35: Washing and cleaning products (including solvent

based products)

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

**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 con-

tainers (dedicated filling line, including weighing)

**PROC14:** Production of preparations or articles by tabletting,

compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

Environmental Release Categories

Further information

: **ERC2:** Formulation of preparations

Cosmetics Europe / COLIPA

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 406.8 t

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa-

: 18,000 m3/d

ter

according to Regulation (EC) No. 1907/2006



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Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 % Emission or Release Factor: Water : 0.2 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

: 2,000 m3/d

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Mixture/Article

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

MSDS\_GB / EN 139 / 234

according to Regulation (EC) No. 1907/2006



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#### 2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

#### 2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

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**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Solid mixture

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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

: Process sampling Activity

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use)

: Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

Product characteristics

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.02 mg/l	0.88
			Fresh water sedi-		0.20 mg/kg dry	0.88
			ment		weight	
			Marine water		0.002 mg/l	0.88
			Marine sediment		0.02 mg/kg dry weight	0.88
			Sewage treatment plant		0.2 mg/l	0.02
			Soil		0.03 mg/kg dry weight	0.85

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific condi- tions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m³	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers	·	Inhalation: short-term,	8.41 mg/cm2	0.47

according to Regulation (EC) No. 1907/2006



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Version 4.0 **Revision Date 18.11.2019** Date of last issue: 02.10.2014 3.0 systemic PROC15 0.20 mg/kg bw/day TRA Workers Dermal: long-term, 0.08 systemic 3.0 PROC15 TRA Workers 0.06 mg/cm2 0.04 Chronic dermal local 3.0 exposure PROC15 TRA Workers Dermal: acute, local 0.06 mg/cm2 0.04 3.0 Worker (Indus-PROC2, Liquid mix-TRA Workers Inhalation: long-term, 0.70 mg/m<sup>3</sup> 0.23 ture 3.0 trial) systemic PROC2 TRA Workers Inhalation: short-term, 2.81 mg/m<sup>3</sup> 0.16 3.0 systemic PROC2 TRA Workers 0.14 mg/kg bw/day 0.05 Dermal: long-term, systemic 3.0 PROC2 TRA Workers Chronic dermal local 0.02 mg/cm2 0.01 3.0 exposure PROC2 TRA Workers 0.02 mg/cm2 0.01 Dermal: acute, local 3.0 PROC4, PROC8a, TRA Workers Worker (Indus-Inhalation: long-term,  $<= 0.70 \text{ mg/m}^3$ <= 0.23 PROC8b, PROC9, 3.0 trial) systemic Liquid mixture PROC4, PROC8a, TRA Workers Inhalation: short-term,  $<= 2.81 \text{ mg/m}^3$ <= 0.16 PROC8b, PROC9 3.0 systemic <= 1.37 mg/kg <= 0.51 PROC4. PROC8a. TRA Workers Dermal: long-term, PROC8b, PROC9 systemic bw/day 3.0 PROC4, PROC8a, TRA Workers 0.06 Chronic dermal local 0.1 mg/cm2 PROC8b. PROC9 3.0 exposure PROC4, PROC8a, TRA Workers Dermal: acute, local <= 0.1 mg/cm2 <= 0.06 PROC8b, PROC9 3.0 PROC15, Liquid mix-TRA Workers Worker (Indus-2.45 mg/m<sup>3</sup> Inhalation: long-term, 0.82 ture 3.0 trial) systemic PROC15 TRA Workers Inhalation: short-term, 9.82 mg/m<sup>3</sup> 0.55 3.0 systemic PROC15 TRA Workers 0.03 mg/kg bw/d 0.01 Dermal: long-term, 3.0 systemic PROC15 TRA Workers Chronic dermal local 0.01 mg/cm2 < 0.01 3.0 exposure PROC15 TRA Workers Dermal: acute, local 0.01 mg/cm2 < 0.01 3.0 PROC19, Liquid mix-TRA Workers Worker (Indus-Inhalation: long-term, 0.70 mg/m<sup>3</sup> 0.23 ture 3.0 trial) systemic PROC19 2.81 mg/m<sup>3</sup> TRA Workers Inhalation: short-term, 0.16 systemic 3.0 PROC19 0.52 TRA Workers Dermal: long-term, 1.41 mg/kg bw/d systemic 3.0 PROC19 TRA Workers Chronic dermal local 0.05 mg/cm2 0.03 3.0 exposure PROC19 TRA Workers 0.05 mg/cm2 0.03 Dermal: acute, local 3.0 PROC3. Solid mixture TRA Workers Worker (Indus-Inhalation: long-term, 1.26 mg/m<sup>3</sup> 0.42 trial) systemic 3.0 TRA Workers PROC3 Inhalation: short-term, 5.05 mg/m<sup>3</sup> 0.28 3.0 systemic PROC3 TRA Workers Dermal: long-term, 0.41 mg/kg bw/day 0.15 systemic 3.0 PROC3 0.12 mg/cm2 0.08 TRA Workers Chronic dermal local 3.0 exposure TRA Workers PROC3 Dermal: acute, local 0.12 mg/cm2 0.08 3.0 Worker (Indus-PROC5, Solid mixture Inhalation: long-term, 1.47 mg/m<sup>3</sup> 0.49 TRA Workers 3.0 trial) systemic PROC5 5.89 mg/m<sup>3</sup> 0.33 TRA Workers Inhalation: short-term, 3.0 systemic PROC5 TRA Workers Dermal: long-term, 0.82 mg/kg bw/day 0.31 3.0 systemic

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PROC5	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC2, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC2	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m <sup>3</sup>	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC9, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC8b, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.25 mg/m³	0.08
PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	0.98 mg/m <sup>3</sup>	0.06
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC14, PROC15, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC14, PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC14, PROC15	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.34 mg/kg bw/d	<= 0.13
PROC14, PROC15	TRA Workers 3.0		Chronic dermal local exposure	<= 0.05 mg/cm2	<= 0.03
PROC14, PROC15	TRA Workers 3.0		Dermal: acute, local	<= 0.05 mg/cm2	<= 0.03
PROC19, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC19	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

according to Regulation (EC) No. 1907/2006



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

EUSES = EUSES version 2.1.1



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# ES 15: (AISE) Formulation of Detergents/Maintenance Products: High Viscosity Liquids (small scale)

#### 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

PC31: Polishes and wax blends

PC35: Washing and cleaning products (including solvent

based products)

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

**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 con-

tainers (dedicated filling line, including weighing)

**PROC14:** Production of preparations or articles by tabletting,

compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

Environmental Release Categories

Further information

: **ERC2:** Formulation of preparations

Cosmetics Europe / COLIPA

## 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 203.3 t

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa-

: 18,000 m3/d

ter

according to Regulation (EC) No. 1907/2006



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Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 % Emission or Release Factor: Water : 0.4 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

plant effluent

Effectiveness (of a measure)

Sludge Treatment

: 87.7 %

: 2,000 m3/d

: Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Mixture/Article

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

MSDS\_GB / EN 149 / 234

according to Regulation (EC) No. 1907/2006



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# 2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

Activity : Process sampling

Product characteristics

Concentration of the Substance in

Minton / Anti-la

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

## 2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

# 2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

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**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Lie

: Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

et characteristics

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

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### Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

## 2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

Activity : Process sampling

Product characteristics

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

# 2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

## 2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)

## 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.02 mg/l	0.88
			Fresh water sedi- ment		0.20 mg/kg dry weight	0.88
			Marine water		0.002 mg/l	0.88
			Marine sediment		0.02 mg/kg dry weight	0.88
			Sewage treatment plant		0.2 mg/l	0.02
			Soil		0.03 mg/kg dry weight	0.85

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m³	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers		Inhalation: short-term,	8.41 mg/cm2	0.47

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Version 4.0         Revision Date 18.11.2019         Date of last issue: 02           PROC15         TRA Workers 3.0         Dermal: long-term, systemic         0.20 mg/kg bw/day           PROC15         TRA Workers 3.0         Chronic dermal local exposure         0.06 mg/cm2           PROC15         TRA Workers 3.0         Dermal: acute, local         0.06 mg/cm2           PROC2, Liquid mix- ture         TRA Workers 3.0         Worker (Indus- trial)         Inhalation: long-term, systemic         0.70 mg/m³           PROC2         TRA Workers 3.0         Dermal: long-term, systemic         0.14 mg/kg bw/day           PROC2         TRA Workers 3.0         Dermal: long-term, systemic         0.14 mg/kg bw/day           PROC2         TRA Workers 3.0         Dermal: long-term, systemic         0.02 mg/cm2           PROC2         TRA Workers 3.0         Dermal: acute, local         0.02 mg/cm2           PROC4, PROC8a, PROC9, Liquid mixture         TRA Workers 3.0         Inhalation: long-term, systemic         <= 0.70 mg/m³           PROC4, PROC8a, PROC8b, PROC9         TRA Workers 3.0         Dermal: long-term, systemic         <= 1.37 mg/kg bw/day           PROC4, PROC8a, PROC8b, PROC9         TRA Workers         Dermal: long-term, systemic         <= 1.37 mg/kg bw/day           PROC4, PROC8a, PROC8b, PROC9         TRA Workers         Dermal: long-	0.08 0.04 0.04 0.05 0.01 0.01 <= 0.23 <= 0.16 <= 0.51 0.06 <= 0.06 0.82
PROC15         TRA Workers 3.0         Dermal: long-term, systemic         0.20 mg/kg bw/day           PROC15         TRA Workers 3.0         Chronic dermal local exposure         0.06 mg/cm2           PROC15         TRA Workers 3.0         Dermal: acute, local exposure         0.06 mg/cm2           PROC2, Liquid mixture         TRA Workers 3.0         Worker (Industrial)         Inhalation: long-term, systemic         0.70 mg/m³           PROC2         TRA Workers 3.0         Dermal: long-term, systemic         0.14 mg/kg bw/day           PROC2         TRA Workers 3.0         Dermal: long-term, systemic         0.14 mg/kg bw/day           PROC2         TRA Workers 3.0         Chronic dermal local exposure         0.02 mg/cm2           PROC2         TRA Workers 3.0         Dermal: acute, local exposure         0.02 mg/cm2           PROC4, PROC8a, PROC9, Liquid mixture         3.0         Inhalation: long-term, systemic         <= 0.70 mg/m³           PROC4, PROC8a, PROC9 3.0         TRA Workers ystemic         Dermal: long-term, systemic         <= 2.81 mg/m³           PROC4, PROC8a, PROC9 3.0         TRA Workers ystemic         Dermal: long-term, systemic         <= 1.37 mg/kg bw/day           PROC4, PROC8a, PROC9 3.0         TRA Workers ystemic         Dermal: long-term, systemic         <= 0.1 mg/cm2           PROC4, PROC8a, PROC9 3.0         T	0.04 0.04 0.23 0.16 0.05 0.01 0.01 <= 0.23 <= 0.16 <= 0.51 0.06 <= 0.06
PROC15         TRA Workers 3.0         Dermal: long-term, systemic         0.20 mg/kg bw/day           PROC15         TRA Workers 3.0         Chronic dermal local exposure         0.06 mg/cm2           PROC15         TRA Workers 3.0         Dermal: acute, local exposure         0.06 mg/cm2           PROC2, Liquid mixture         TRA Workers 3.0         Worker (Industrial)         Inhalation: long-term, systemic         0.70 mg/m³           PROC2         TRA Workers 3.0         Dermal: long-term, systemic         0.14 mg/kg bw/day           PROC2         TRA Workers 3.0         Dermal: long-term, systemic         0.14 mg/kg bw/day           PROC2         TRA Workers 3.0         Chronic dermal local exposure         0.02 mg/cm2           PROC2         TRA Workers 3.0         Dermal: acute, local exposure         0.02 mg/cm2           PROC4, PROC8a, PROC9, Liquid mixture         3.0         Inhalation: long-term, systemic         <= 0.70 mg/m³	0.04 0.04 0.23 0.16 0.05 0.01 0.01 <= 0.23 <= 0.16 <= 0.51 0.06 <= 0.06
PROC15	0.04 0.04 0.23 0.16 0.05 0.01 0.01 <= 0.23 <= 0.16 <= 0.51 0.06 <= 0.06
RROC15	0.04 0.23 0.16 0.05 0.01 0.01 <= 0.23 <= 0.16 <= 0.51 0.06 <= 0.06
PROC2, Liquid mix-ture	0.23 0.16 0.05 0.01 0.01 <= 0.23 <= 0.16 <= 0.51 0.06 <= 0.06
PROC2, Liquid mixture         TRA Workers 3.0         Worker (Industrial)         Inhalation: long-term, systemic         0.70 mg/m³           PROC2         TRA Workers 3.0         Inhalation: short-term, systemic         2.81 mg/m³           PROC2         TRA Workers 3.0         Dermal: long-term, systemic         0.14 mg/kg bw/day           PROC2         TRA Workers 3.0         Chronic dermal local exposure         0.02 mg/cm2           PROC2         TRA Workers 3.0         Dermal: acute, local exposure         0.02 mg/cm2           PROC4, PROC8a, PROC9, Liquid mixture         TRA Workers 3.0         Inhalation: long-term, systemic         <= 0.70 mg/m³	0.16 0.05 0.01 0.01 <= 0.23 <= 0.16 <= 0.51 0.06 <= 0.06
PROC2         TRA Workers 3.0         Inhalation: short-term, systemic         2.81 mg/m³ systemic           PROC2         TRA Workers 3.0         Dermal: long-term, systemic         0.14 mg/kg bw/day           PROC2         TRA Workers 3.0         Chronic dermal local exposure         0.02 mg/cm2           PROC2         TRA Workers 3.0         Dermal: acute, local         0.02 mg/cm2           PROC4, PROC8a, PROC9, Liquid mixture         TRA Workers 3.0         Inhalation: long-term, systemic         <= 0.70 mg/m³	0.05 0.01 0.01 <= 0.23 <= 0.16 <= 0.51 0.06 <= 0.06
PROC2         TRA Workers 3.0         Dermal: long-term, systemic         0.14 mg/kg bw/day systemic           PROC2         TRA Workers 3.0         Chronic dermal local exposure         0.02 mg/cm2           PROC2         TRA Workers 3.0         Dermal: acute, local exposure         0.02 mg/cm2           PROC4, PROC8a, PROC9, Liquid mixture         TRA Workers 3.0         Worker (Industrial)         Inhalation: long-term, systemic         <= 0.70 mg/m³	0.01 0.01 <= 0.23 <= 0.16 <= 0.51 0.06 <= 0.06
PROC2         TRA Workers 3.0         Chronic dermal local exposure         0.02 mg/cm2 exposure           PROC4         TRA Workers 3.0         Dermal: acute, local o.02 mg/cm2           PROC4, PROC8a, PROC9, Liquid mixture         TRA Workers 3.0         Worker (Industrial) systemic         <= 0.70 mg/m³	0.01 <= 0.23 <= 0.16 <= 0.51  0.06 <= 0.06
PROC2         TRA Workers 3.0         Dermal: acute, local         0.02 mg/cm2           PROC4, PROC8a, PROC9, Liquid mixture         TRA Workers 3.0         Worker (Industrial)         Inhalation: long-term, systemic         <= 0.70 mg/m³	<= 0.23 <= 0.16 <= 0.51 0.06 <= 0.06
PROC4, PROC8a, PROC9, Liquid mixture  PROC4, PROC8a, PROC9, Liquid mixture  PROC4, PROC8a, PROC9  PROC5, PROC9  PROC5, Liquid mixture  PROC15, Liquid mixture  PROC15  TRA Workers  3.0	<= 0.16 <= 0.51 0.06 <= 0.06
PROC4, PROC8a, PROC9  PROC4, PROC8a, PROC9  RROC8b, PROC9  RROC4, PROC8a, PROC8a, PROC9  RROC8b, PROC9  RROC8b, PROC9  RROC8b, PROC9  RROC4, PROC8a, PROC9  RROC8b, PROC9  RROC5, Liquid mixture  RROC15  RRA Workers  RRA Wo	<= 0.51 0.06 <= 0.06
PROC4, PROC8a, PROC9 3.0 Dermal: long-term, systemic bw/day  PROC4, PROC8a, PROC9 3.0 Chronic dermal local exposure  PROC4, PROC8a, PROC9 3.0 Dermal: acute, local exposure  PROC8b, PROC9 3.0 Dermal: acute, local exposure  PROC15, Liquid mixture 3.0 TRA Workers sold trial) Systemic  PROC15 TRA Workers Sold Transition TRA Workers Sold Transition TRA Workers Sold Transition TRA Workers Sold Transition Transition Transition Sold Transit	0.06
PROC4, PROC8a, PROC9TRA Workers 3.0Chronic dermal local exposure0.1 mg/cm2PROC4, PROC8a, PROC9TRA Workers 3.0Dermal: acute, local exposure<= 0.1 mg/cm2	<= 0.06
PROC4, PROC8a, PROC9         TRA Workers 3.0         Dermal: acute, local         <= 0.1 mg/cm2           PROC15, Liquid mixture         TRA Workers 3.0         Worker (Industrial)         Inhalation: long-term, systemic         2.45 mg/m³           PROC15         TRA Workers 3.0         Inhalation: short-term, systemic         9.82 mg/m³           PROC15         TRA Workers 3.0         Dermal: long-term, systemic         0.03 mg/kg bw/d           PROC15         TRA Workers 3.0         Chronic dermal local exposure         0.01 mg/cm2           PROC15         TRA Workers 3.0         Dermal: acute, local only formal countering local exposure         0.01 mg/cm2           PROC19, Liquid mix-         TRA Workers Worker (Indus- Inhalation: long-term, only formal countering local local subject to the local only formal countering local exposure         0.70 mg/m³	
PROC15, Liquid mixture     TRA Workers 3.0     Worker (Industrial)     Inhalation: long-term, systemic     2.45 mg/m³       PROC15     TRA Workers 3.0     Inhalation: short-term, systemic     9.82 mg/m³       PROC15     TRA Workers 3.0     Dermal: long-term, systemic     0.03 mg/kg bw/d       PROC15     TRA Workers 3.0     Chronic dermal local exposure     0.01 mg/cm2       PROC15     TRA Workers 3.0     Dermal: acute, local 3.0     0.01 mg/cm2       PROC15     TRA Workers 3.0     Dermal: acute, local 3.0     0.01 mg/cm2       PROC19, Liquid mix-     TRA Workers Worker (Indus- Inhalation: long-term, 0.70 mg/m³	0.82
PROC15         TRA Workers 3.0         Inhalation: short-term, systemic         9.82 mg/m³           PROC15         TRA Workers 3.0         Dermal: long-term, systemic         0.03 mg/kg bw/d           PROC15         TRA Workers 3.0         Chronic dermal local exposure         0.01 mg/cm2           PROC15         TRA Workers 3.0         Dermal: acute, local 3.0         0.01 mg/cm2           PROC19, Liquid mix-         TRA Workers Worker (Indus- Inhalation: long-term, 0.70 mg/m³         0.70 mg/m³	0.02
PROC15         TRA Workers 3.0         Dermal: long-term, systemic         0.03 mg/kg bw/d           PROC15         TRA Workers 3.0         Chronic dermal local exposure         0.01 mg/cm2           PROC15         TRA Workers 3.0         Dermal: acute, local acute, local 3.0         0.01 mg/cm2           PROC19, Liquid mix-         TRA Workers Worker (Indus- Inhalation: long-term, 0.70 mg/m³         0.70 mg/m³	0.55
PROC15 TRA Workers 3.0 Chronic dermal local exposure PROC15 TRA Workers 3.0 Dermal: acute, local 0.01 mg/cm2	0.01
PROC15 TRA Workers Dermal: acute, local 0.01 mg/cm2 3.0  PROC19, Liquid mix- TRA Workers Worker (Indus- Inhalation: long-term, 0.70 mg/m³	< 0.01
PROC19, Liquid mix- TRA Workers   Worker (Indus- Inhalation: long-term, 0.70 mg/m³	< 0.01
ture 3.0 trial) systemic	0.23
PROC19 TRA Workers Inhalation: short-term, systemic 2.81 mg/m³ systemic	0.16
PROC19 TRA Workers Dermal: long-term, 3.0 systemic 1.41 mg/kg bw/d systemic	0.52
PROC19 TRA Workers Chronic dermal local 0.05 mg/cm2 exposure	0.03
PROC19 TRA Workers Dermal: acute, local 0.05 mg/cm2	0.03
PROC3, Solid mixture TRA Workers Worker (Indus- Inhalation: long-term, 3.0 trial) systemic 1.26 mg/m³	0.42
PROC3 TRA Workers Inhalation: short-term, systemic 5.05 mg/m³ systemic	0.28
PROC3 TRA Workers Dermal: long-term, 0.41 mg/kg bw/day	0.15
3.0 systemic  PROC3 TRA Workers Chronic dermal local 0.12 mg/cm2	0.08
3.0 exposure  PROC3 TRA Workers Dermal: acute, local 0.12 mg/cm2	0.08
PROC5, Solid mixture TRA Workers Worker (Indus- Inhalation: long-term, 3.0 trial) systemic 1.47 mg/m³	0.49
PROC5 TRA Workers Inhalation: short-term, systemic 5.89 mg/m³ systemic	
PROC5 TRA Workers Dermal: long-term, 3.0 systemic 0.82 mg/kg bw/day systemic	0.33

according to Regulation (EC) No. 1907/2006



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TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
TRA Workers 3.0	,	Inhalation: short-term, systemic		0.16
3.0		systemic		0.05
3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
TRA Workers 3.0		Dermal: long-term,	<= 1.37 mg/kg bw/day	<= 0.51
TRA Workers		Chronic dermal local	0.1 mg/cm2	0.06
TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
TRA Workers	Worker (Indus- trial)	Inhalation: long-term, systemic	0.25 mg/m <sup>3</sup>	0.08
TRA Workers 3.0	,	Inhalation: short-term,	0.98 mg/m³	0.06
TRA Workers 3.0		Dermal: long-term,	1.37 mg/kg bw/day	0.51
TRA Workers 3.0		Chronic dermal local	0.1 mg/cm2	0.06
TRA Workers		Dermal: acute, local	0.1 mg/cm2	0.06
TRA Workers	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
TRA Workers	,	Inhalation: short-term,	9.82 mg/m³	0.55
TRA Workers 3.0		Dermal: long-term,	<= 0.34 mg/kg bw/d	<= 0.13
TRA Workers 3.0		Chronic dermal local	<= 0.05 mg/cm2	<= 0.03
TRA Workers		Dermal: acute, local	<= 0.05 mg/cm2	<= 0.03
TRA Workers	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
TRA Workers		Inhalation: short-term,	2.81 mg/m³	0.16
TRA Workers		Dermal: long-term,	1.41 mg/kg bw/d	0.52
TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
TRA Workers		Dermal: acute, local	0.05 mg/cm2	0.03
	TRA Workers 3.0 TRA Workers	TRA Workers 3.0 TRA Workers	TRA Workers 3.0 TRA Workers 4.0 TRA Workers 5.0 TRA Workers 5.0 TRA Workers 5.0 TRA Workers 6.0 TRA Workers 6.0 TRA Workers 7.0 TRA Workers 8.0 TRA Workers 8.0 TRA Workers 9.0 TRA Workers 9.	TRA Workers

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

according to Regulation (EC) No. 1907/2006



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

EUSES = EUSES version 2.1.1



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# ES 16: (AISE) Formulation of Detergents/Maintenance Products: Granular Compact (large scale)

1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

PC31: Polishes and wax blends

PC35: Washing and cleaning products (including solvent

based products)

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

**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 con-

tainers (dedicated filling line, including weighing)

**PROC14:** Production of preparations or articles by tabletting,

compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

Environmental Release Categories

Further information

: **ERC2:** Formulation of preparations

Cosmetics Europe / COLIPA

## 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 300 t

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa-

: 18,000 m3/d

ter

according to Regulation (EC) No. 1907/2006



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Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 % Emission or Release Factor: Water : 0.01 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

: 2,000 m3/d

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Mixture/Article

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

according to Regulation (EC) No. 1907/2006



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### 2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

## 2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

: Liquid mixture

Frequency and duration of use

Physical Form (at time of use)

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

## 2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

MSDS GB/EN 160 / 234

according to Regulation (EC) No. 1907/2006



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**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Solid mixture

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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

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: Covers percentage substance in the product up to 1 %.

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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

## 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess-	Specific conditions	Compartment	Value	Level of Exposure	RCR
Comane	ment Meth- od	Conditions			(PEC)	
ERC2	EUSES		Fresh water		0.0009 mg/l	0.04
			Fresh water sedi-		0.009 mg/kg dry	0.04
			ment		weight	
			Marine water		0.00009 mg/l	0.04
			Marine sediment		0.0009 mg/kg dry	0.04
					weight	
			Sewage treatment		0.007 mg/l	< 0.01
			plant			
			Soil		0.001 mg/kg dry weight	0.03

#### **Workers**

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m <sup>3</sup>	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m <sup>3</sup>	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers		Inhalation: short-term,	8.41 mg/cm2	0.47

according to Regulation (EC) No. 1907/2006



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Version 4.0 **Revision Date 18.11.2019** Date of last issue: 02.10.2014 3.0 systemic PROC15 0.20 mg/kg bw/day TRA Workers Dermal: long-term, 0.08 systemic 3.0 PROC15 TRA Workers 0.06 mg/cm2 0.04 Chronic dermal local 3.0 exposure PROC15 TRA Workers Dermal: acute, local 0.06 mg/cm2 0.04 3.0 Worker (Indus-PROC2, Liquid mix-TRA Workers Inhalation: long-term, 0.70 mg/m<sup>3</sup> 0.23 ture 3.0 trial) systemic PROC2 TRA Workers Inhalation: short-term, 2.81 mg/m<sup>3</sup> 0.16 3.0 systemic PROC2 TRA Workers 0.14 mg/kg bw/day 0.05 Dermal: long-term, systemic 3.0 PROC2 TRA Workers Chronic dermal local 0.02 mg/cm2 0.01 3.0 exposure PROC2 TRA Workers 0.02 mg/cm2 0.01 Dermal: acute, local 3.0 PROC4, PROC8a, TRA Workers Worker (Indus-Inhalation: long-term,  $<= 0.70 \text{ mg/m}^3$ <= 0.23 PROC8b, PROC9, 3.0 trial) systemic Liquid mixture PROC4, PROC8a, TRA Workers Inhalation: short-term,  $<= 2.81 \text{ mg/m}^3$ <= 0.16 PROC8b, PROC9 3.0 systemic <= 1.37 mg/kg <= 0.51 PROC4. PROC8a. TRA Workers Dermal: long-term, PROC8b, PROC9 systemic bw/day 3.0 PROC4, PROC8a, TRA Workers 0.06 Chronic dermal local 0.1 mg/cm2 PROC8b. PROC9 3.0 exposure PROC4, PROC8a, TRA Workers Dermal: acute, local <= 0.1 mg/cm2 <= 0.06 PROC8b, PROC9 3.0 PROC15, Liquid mix-TRA Workers Worker (Indus-2.45 mg/m<sup>3</sup> Inhalation: long-term, 0.82 ture 3.0 trial) systemic PROC15 TRA Workers Inhalation: short-term, 9.82 mg/m<sup>3</sup> 0.55 3.0 systemic PROC15 TRA Workers 0.03 mg/kg bw/d 0.01 Dermal: long-term, 3.0 systemic PROC15 TRA Workers Chronic dermal local 0.01 mg/cm2 < 0.01 3.0 exposure PROC15 TRA Workers Dermal: acute, local 0.01 mg/cm2 < 0.01 3.0 PROC19, Liquid mix-TRA Workers Worker (Indus-Inhalation: long-term, 0.70 mg/m<sup>3</sup> 0.23 ture 3.0 trial) systemic PROC19 2.81 mg/m<sup>3</sup> TRA Workers Inhalation: short-term, 0.16 systemic 3.0 PROC19 0.52 TRA Workers Dermal: long-term, 1.41 mg/kg bw/d systemic 3.0 PROC19 TRA Workers Chronic dermal local 0.05 mg/cm2 0.03 3.0 exposure PROC19 TRA Workers 0.05 mg/cm2 0.03 Dermal: acute, local 3.0 PROC3. Solid mixture TRA Workers Worker (Indus-Inhalation: long-term, 1.26 mg/m<sup>3</sup> 0.42 trial) systemic 3.0 TRA Workers PROC3 Inhalation: short-term, 5.05 mg/m<sup>3</sup> 0.28 3.0 systemic PROC3 TRA Workers Dermal: long-term, 0.41 mg/kg bw/day 0.15 systemic 3.0 PROC3 0.12 mg/cm2 0.08 TRA Workers Chronic dermal local 3.0 exposure TRA Workers PROC3 Dermal: acute, local 0.12 mg/cm2 0.08 3.0 Worker (Indus-PROC5, Solid mixture Inhalation: long-term, 1.47 mg/m<sup>3</sup> 0.49 TRA Workers 3.0 trial) systemic PROC5 5.89 mg/m<sup>3</sup> 0.33 TRA Workers Inhalation: short-term, 3.0 systemic PROC5 TRA Workers Dermal: long-term, 0.82 mg/kg bw/day 0.31 3.0 systemic

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PROC5	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC2, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC2	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC9, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC9	TRA Workers 3.0	, ,	Inhalation: short-term, systemic	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC8b, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.25 mg/m³	0.08
PROC8b	TRA Workers 3.0	,	Inhalation: short-term, systemic	0.98 mg/m³	0.06
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC14, PROC15, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC14, PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC14, PROC15	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.34 mg/kg bw/d	<= 0.13
PROC14, PROC15	TRA Workers 3.0		Chronic dermal local exposure	<= 0.05 mg/cm2	<= 0.03
PROC14, PROC15	TRA Workers 3.0		Dermal: acute, local	<= 0.05 mg/cm2	<= 0.03
PROC19, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC19	TRA Workers 3.0	,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

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

EUSES = EUSES version 2.1.1



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# ES 17: (AISE) Formulation of Detergents/Maintenance Products: Granular Compact (small scale)

#### 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

PC31: Polishes and wax blends

PC35: Washing and cleaning products (including solvent

based products)

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

**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 con-

tainers (dedicated filling line, including weighing)

**PROC14:** Production of preparations or articles by tabletting,

compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

Environmental Release Categories

Further information : Co

: **ERC2:** Formulation of preparations

: Cosmetics Europe / COLIPA

### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

**Amount used** 

Daily amount per site : 200 kg Annual amount per site (Msafe) : 50 t

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa- : 18,000 m3/d

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ter

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 % Emission or Release Factor: Water : 0.2 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment : 2,000 m3/d

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Mixture/Article

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

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### 2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

## 2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

### 2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use)

: Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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# 2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Liquid mixture

Frequency and duration of use

Physical Form (at time of use)

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

### 2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

#### 2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

## 2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

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Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

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## Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

## 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.003 mg/l	0.12
			Fresh water sedi- ment		0.03 mg/kg dry weight	0.12
			Marine water		0.0003 mg/l	0.12
			Marine sediment		0.003 mg/kg dry weight	0.12
			Sewage treatment plant		0.03 mg/l	< 0.01
			Soil		0.003 mg/kg dry weight	0.10

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0	,	Inhalation: short-term, systemic	5.05 mg/m <sup>3</sup>	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08

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DDOC15 Liquid mix	TRA Workers	Worker (Indus-	•		
PROC15, Liquid mix- ture	3.0	trial)	Inhalation: long-term, systemic	2.10 mg/m³	0.70
PROC15	TRA Workers	lilai)	Inhalation: short-term,	8.41 mg/cm2	0.47
110010	3.0		systemic	0.41 mg/omz	0.47
PROC15	TRA Workers		Dermal: long-term,	0.20 mg/kg bw/day	0.08
1110010	3.0		systemic	0.20 mg/kg bw/day	0.00
PROC15	TRA Workers		Chronic dermal local	0.06 mg/cm2	0.04
	3.0		exposure	J. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	
PROC15	TRA Workers		Dermal: acute, local	0.06 mg/cm2	0.04
	3.0		·		
PROC2, Liquid mix-	TRA Workers	Worker (Indus-	Inhalation: long-term,	0.70 mg/m <sup>3</sup>	0.23
ture	3.0	trial)	systemic	-	
PROC2	TRA Workers		Inhalation: short-term,	2.81 mg/m³	0.16
	3.0		systemic		
PROC2	TRA Workers		Dermal: long-term,	0.14 mg/kg bw/day	0.05
	3.0		systemic		
PROC2	TRA Workers		Chronic dermal local	0.02 mg/cm2	0.01
	3.0		exposure		
PROC2	TRA Workers		Dermal: acute, local	0.02 mg/cm2	0.01
	3.0				
PROC4, PROC8a,	TRA Workers	Worker (Indus-	Inhalation: long-term,	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC8b, PROC9,	3.0	trial)	systemic		
Liquid mixture					
PROC4, PROC8a,	TRA Workers		Inhalation: short-term,	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC8b, PROC9	3.0		systemic		
PROC4, PROC8a,	TRA Workers		Dermal: long-term,	<= 1.37 mg/kg	<= 0.51
PROC8b, PROC9	3.0		systemic	bw/day	
PROC4, PROC8a,	TRA Workers		Chronic dermal local	0.1 mg/cm2	0.06
PROC8b, PROC9	3.0		exposure		
PROC4, PROC8a,	TRA Workers		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC8b, PROC9	3.0				
PROC15, Liquid mix-	TRA Workers	Worker (Indus-	Inhalation: long-term,	2.45 mg/m <sup>3</sup>	0.82
ture	3.0	trial)	systemic		
PROC15	TRA Workers		Inhalation: short-term,	9.82 mg/m³	0.55
DD0045	3.0		systemic	0.00 # 1 /1	
PROC15	TRA Workers		Dermal: long-term,	0.03 mg/kg bw/d	0.01
DD0045	3.0		systemic	0.04 / 0	0.04
PROC15	TRA Workers		Chronic dermal local	0.01 mg/cm2	< 0.01
DD0045	3.0 TRA Workers		exposure	0.04	0.04
PROC15			Dermal: acute, local	0.01 mg/cm2	< 0.01
DDOC40 Liquid mix	3.0 TRA Workers	Morkor (Indus	Inhalation, lang tarm	0.70 mg/m³	0.23
PROC19, Liquid mix-		Worker (Indus-	Inhalation: long-term,	0.70 mg/m³	0.23
ture PROC19	3.0 TRA Workers	trial)	systemic Inhalation: short-term,	2.81 mg/m³	0.16
PROCIS	3.0		systemic	2.01 Hig/III*	0.16
PROC19	TRA Workers		Dermal: long-term,	1.41 mg/kg bw/d	0.52
FNOCIS	3.0		systemic	1.41 mg/kg bw/d	0.32
PROC19	TRA Workers		Chronic dermal local	0.05 mg/cm2	0.03
110019	3.0		exposure	0.00 mg/omz	0.03
PROC19	TRA Workers		Dermal: acute, local	0.05 mg/cm2	0.03
110019	3.0		Donnai. acute, iocal	0.00 mg/omz	0.03
PROC3, Solid mixture	TRA Workers	Worker (Indus-	Inhalation: long-term,	1.26 mg/m³	0.42
i itooo, oolia illixiale	3.0	trial)	systemic	1.20 mg/m²	0.42
PROC3	TRA Workers	uiai)	Inhalation: short-term,	5.05 mg/m³	0.28
11000	3.0		systemic	0.00 mg/m	0.20
PROC3	TRA Workers		Dermal: long-term,	0.41 mg/kg bw/day	0.15
11000	3.0		systemic	o. 11 mg/ng bw/ddy	5.15
PROC3	TRA Workers		Chronic dermal local	0.12 mg/cm2	0.08
11000	3.0		exposure	0.12 mg/om2	5.00
PROC3	TRA Workers		Dermal: acute, local	0.12 mg/cm2	0.08
111000	3.0			5.12 mg/5m2	5.55
PROC5, Solid mixture	TRA Workers	Worker (Indus-	Inhalation: long-term,	1.47 mg/m³	0.49
	3.0	trial)	systemic		5.10
PROC5	TRA Workers	,	Inhalation: short-term,	5.89 mg/m³	0.33
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according to Regulation (EC) No. 1907/2006



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Version 4.0 Revision Date 18.11.2019 Date of last issue: 02.10.2014 3.0 systemic PROC5 0.82 mg/kg bw/day TRA Workers 0.31 Dermal: long-term, systemic 3.0 PROC5 <= 0.12 mg/cm2 TRA Workers Chronic dermal local <= 0.08 3.0 exposure PROC5 TRA Workers Dermal: acute, local <= 0.12 mg/cm2 <= 0.08 3.0 Worker (Indus-PROC2, Solid mixture TRA Workers Inhalation: long-term, 0.70 mg/m<sup>3</sup> 0.23 3.0 trial) systemic PROC2 TRA Workers Inhalation: short-term, 2.81 mg/m<sup>3</sup> 0.16 3.0 systemic PROC2 TRA Workers 0.14 mg/kg bw/day 0.05 Dermal: long-term, systemic 3.0 PROC2 TRA Workers Chronic dermal local 0.02 mg/cm2 0.01 3.0 exposure PROC2 TRA Workers 0.02 mg/cm2 0.01 Dermal: acute, local 3.0 PROC4, PROC8a, TRA Workers Worker (Indus-Inhalation: long-term,  $<= 0.70 \text{ mg/m}^3$ <= 0.23 PROC9, Solid mixture 3.0 trial) systemic PROC4, PROC8a, TRA Workers Inhalation: short-term,  $<= 2.81 \text{ mg/m}^3$ <= 0.16 PROC9 3.0 systemic PROC4, PROC8a, TRA Workers Dermal: long-term,  $\leq 1.37 \text{ mg/kg}$ <= 0.51 PROC9 3.0 systemic bw/day PROC4, PROC8a, 0.06 TRA Workers Chronic dermal local 0.1 mg/cm2 PROC9 3.0 exposure PROC4, PROC8a. TRA Workers Dermal: acute, local <= 0.1 mg/cm2 <= 0.06 PROC9 3.0 PROC8b, Solid mix-TRA Workers Worker (Indus-Inhalation: long-term, 0.25 mg/m<sup>3</sup> 0.08 ture 3.0 trial) systemic PROC8b TRA Workers 0.98 mg/m<sup>3</sup> Inhalation: short-term, 0.06 3.0 systemic PROC8b TRA Workers Dermal: long-term, 1.37 mg/kg bw/day 0.51 3.0 systemic PROC8b TRA Workers Chronic dermal local 0.1 mg/cm2 0.06 <u>expos</u>ure 3.0 PROC8b TRA Workers Dermal: acute, local 0.1 mg/cm2 0.06 3.0 PROC14, PROC15, Worker (Indus-TRA Workers Inhalation: long-term, 2.45 mg/m<sup>3</sup> 0.82 Solid mixture trial) 3.0 systemic PROC14, PROC15 TRA Workers Inhalation: short-term, 9.82 mg/m<sup>3</sup> 0.55 3.0 systemic PROC14, PROC15 <= 0.34 mg/kg TRA Workers Dermal: long-term, <= 0.13 bw/d systemic 3.0 PROC14, PROC15 TRA Workers <= 0.05 mg/cm2 <= 0.03 Chronic dermal local 3.0 exposure PROC14, PROC15 TRA Workers Dermal: acute, local <= 0.05 mg/cm2 <= 0.03 3.0 PROC19, Solid mix-Worker (Indus-Inhalation: long-term, 0.23 TRA Workers 0.70 mg/m<sup>3</sup> trial) ture 3.0 systemic PROC19 TRA Workers Inhalation: short-term, 2.81 mg/m<sup>3</sup> 0.16 3.0 systemic PROC19 TRA Workers Dermal: long-term, 1.41 mg/kg bw/d 0.52 3.0 systemic PROC19 TRA Workers 0.05 mg/cm2 0.03 Chronic dermal local 3.0 exposure PROC19 0.05 mg/cm2 TRA Workers Dermal: acute, local 0.03 3.0

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

according to Regulation (EC) No. 1907/2006



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assumes operating temperature: <= 40 °C

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

EUSES = EUSES version 2.1.1



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# ES 18: (AISE) Formulation of Detergents/Maintenance Products: Granular Regular (small scale), Low Viscosity Liquids (small scale)

#### 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC28:** Perfumes, fragrances

PC35: Washing and cleaning products (including solvent

based products)

PC31: Polishes and wax blends

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

**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 con-

tainers (dedicated filling line, including weighing)

**PROC14:** Production of preparations or articles by tabletting,

compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent

PROC19: Hand-mixing with intimate contact and only PPE

available

Environmental Release Categories

Further information

: **ERC2:** Formulation of preparations

Cosmetics Europe / COLIPA

## 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 36.9 t

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

**Environment factors not influenced by risk management** 

Flow rate of receiving surface wa-

: 18,000 m3/d

ter

according to Regulation (EC) No. 1907/2006



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Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 0.0 % Emission or Release Factor: Water : 0.2 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

: 2,000 m3/d

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid mixture

Activity : Product delivery/storage - product storage - indoor, Loading of

application equipment - batch, indoor (liquid products)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

Activity : Process sampling

**Product characteristics** 

Mixture/Article

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

MSDS\_GB / EN 179 / 234

according to Regulation (EC) No. 1907/2006



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# 2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

Activity : Process sampling

Product characteristics

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

## 2.5 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

: Liquid mixture

Physical Form (at time of use) :

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.6 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

ein :

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

# 2.7 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC9, Liquid mixture

according to Regulation (EC) No. 1907/2006



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**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.8 Contributing scenario controlling worker exposure for: PROC15, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.9 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.10 Contributing scenario controlling worker exposure for: PROC3, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

25 %.

Physical Form (at time of use) : Solid mixture

according to Regulation (EC) No. 1907/2006



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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.11 Contributing scenario controlling worker exposure for: PROC5, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.12 Contributing scenario controlling worker exposure for: PROC2, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.13 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC9, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

according to Regulation (EC) No. 1907/2006



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Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.14 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

Activity : Process sampling

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

Technical conditions and measures

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.15 Contributing scenario controlling worker exposure for: PROC14, PROC15, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

2.16 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

Product characteristics

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

according to Regulation (EC) No. 1907/2006



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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)

## 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.002 mg/l	0.09
			Fresh water sedi-		0.02 mg/kg dry	0.09
			ment		weight	
			Marine water		0.0002 mg/l	0.09
			Marine sediment		0.002 mg/kg dry	0.09
					weight	
			Sewage treatment		0.02 mg/l	< 0.01
			plant		_	
			Soil		0.002 mg/kg dry weight	0.08

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific condi- tions	Value	Level of Exposure	RCR
PROC1, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.04 mg/m <sup>3</sup>	0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.17 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.02 mg/kg bw/d	< 0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.006 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.006 mg/cm2	< 0.01
PROC2, PROC3, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 1.26 mg/m <sup>3</sup>	<= 0.42
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	5.05 mg/m³	<= 0.28
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 0.82 mg/kg bw/day	<= 0.30
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	5.89 mg/m <sup>3</sup>	0.33
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.12 mg/cm2	<= 0.08
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.12 mg/cm2	<= 0.08
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.10 mg/m <sup>3</sup>	0.70
PROC15	TRA Workers		Inhalation: short-term,	8.41 mg/cm2	0.47

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	3.0		systemic		
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.20 mg/kg bw/day	0.08
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.06 mg/cm2	0.04
PROC15	TRA Workers 3.0		Dermal: acute, local	0.06 mg/cm2	0.04
PROC2, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC2	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC8b, PROC9, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a, PROC8b, PROC9	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC15, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m³	0.82
PROC15	TRA Workers 3.0	,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC15	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/kg bw/d	0.01
PROC15	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC15	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC19, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m³	0.23
PROC19	TRA Workers 3.0	, ,	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
PROC3, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.26 mg/m³	0.42
PROC3	TRA Workers 3.0	,	Inhalation: short-term, systemic	5.05 mg/m³	0.28
PROC3	TRA Workers 3.0		Dermal: long-term, systemic	0.41 mg/kg bw/day	0.15
PROC3	TRA Workers 3.0		Chronic dermal local exposure	0.12 mg/cm2	0.08
PROC3	TRA Workers 3.0		Dermal: acute, local	0.12 mg/cm2	0.08
PROC5, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC5	TRA Workers 3.0	,	Inhalation: short-term, systemic	5.89 mg/m³	0.33
PROC5	TRA Workers 3.0		Dermal: long-term, systemic	0.82 mg/kg bw/day	0.31

according to Regulation (EC) No. 1907/2006



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0.08 0.23 0.16 0.05 0.01 0.01 0.01 0.23
0.23 0.16 0.05 0.01
0.16 0.05 0.01 0.01
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= 0.13
= 0.03
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0.03

Further details on SpERCs, scaling, releases and control technologies are provided in IFRA Guidance "REACH Exposure Scenarios for Fragrance Substances"

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

according to Regulation (EC) No. 1907/2006



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

EUSES = EUSES version 2.1.1

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## ES 19: (AISE) Formulation of air care products

1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC3:** Air care products

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

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)

**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 con-

tainers (dedicated filling line, including weighing)

PROC14: Production of preparations or articles by tabletting,

compression, extrusion, pelletisation

PROC19: Hand-mixing with intimate contact and only PPE

available

**Environmental Release Categories** 

Further information

: **ERC2**: Formulation of preparations

: Cosmetics Europe / COLIPA

## 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 18.5 t

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa-

: 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 2.5 %
Emission or Release Factor: Water : 2 %
Emission or Release Factor: Soil : 0.01 %

according to Regulation (EC) No. 1907/2006



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Technical conditions and measures / Organizational measures

: All contaminated waste water must be processed in an indus-Water

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment : 2,000 m3/d

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid substance

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.4 Contributing scenario controlling worker exposure for: PROC4, PROC9, PROC14, **Liquid mixture** 

**Product characteristics** 

Concentration of the Substance in

: Covers the percentage of the substance in the product up to 25 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

2.5 Contributing scenario controlling worker exposure for: PROC5, PROC8b, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

Organisational measures to prevent /limit releases, dispersion and exposure

Ensure operatives are trained to minimise exposures.

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

2.6 Contributing scenario controlling worker exposure for: PROC8a, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

according to Regulation (EC) No. 1907/2006



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## 2.7 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers the percentage of the substance in the product up to

Mixture/Article 25 %

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 95 %)

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

## 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.009 mg/l	0.41
			Fresh water sedi-		0.09 mg/kg dry	0.41
			ment		weight	
			Marine water		0.0009 mg/l	0.41
			Marine sediment		0.009 mg/kg dry weight	0.41
			Sewage treatment plant		0.09 mg/l	< 0.01
			Soil		0.01 mg/kg dry weight	0.39

#### **Workers**

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1, Liquid sub-	TRA Workers	Worker (Indus-	Inhalation: long-term,	0.07 mg/m <sup>3</sup>	0.02
stance	3.0	trial)	systemic		
PROC1	TRA Workers		Inhalation: short-term,	0.28 mg/m <sup>3</sup>	0.02
	3.0		systemic		
PROC1	TRA Workers		Dermal: long-term,	0.03 mg/kg bw/d	0.01
	3.0		systemic		
PROC1	TRA Workers		Chronic dermal local	0.01 mg/cm2	< 0.01
	3.0		exposure		
PROC1	TRA Workers		Dermal: acute, local	0.01 mg/cm2	< 0.01
	3.0				
PROC2, PROC3,	TRA Workers	Worker (Indus-	Inhalation: long-term,	<= 1.26 mg/m <sup>3</sup>	0.42
Liquid mixture	3.0	trial)	systemic	_	
PROC2, PROC3	TRA Workers		Inhalation: short-term,	$<= 5.05 \text{ mg/m}^3$	<= 0.28
	3.0		systemic		
PROC2, PROC3	TRA Workers		Dermal: long-term,	<= 0.82 mg/kg	<= 0.30

according to Regulation (EC) No. 1907/2006



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Version 4.0 Revision Date 18.11.2019 Date of last issue: 02.10.2014 3.0 systemic bw/d PROC2, PROC3 TRA Workers 0.12 mg/cm2 0.08 Chronic dermal local 3.0 exposure PROC2, PROC3 0.12 mg/cm2 0.08 TRA Workers Dermal: acute, local 3.0 PROC4, PROC9, TRA Workers Worker (Indus-Inhalation: long-term, 1.47 mg/m<sup>3</sup> 0.49 PROC14, Liquid mix-3.0 trial) systemic ture PROC4, PROC9, TRA Workers Inhalation: short-term, 5.89 mg/m<sup>3</sup> 0.33 PROC14 3.0 systemic PROC4, PROC9, TRA Workers Dermal: long-term, 0.82 mg/kg bw/day 0.31 <u>sys</u>temic 3.0 PROC14 TRA Workers Chronic dermal local <= 0.12 mg/cm2 <= 0.08 PROC4, PROC9, PROC14 3.0 exposure PROC4, PROC9, TRA Workers <= 0.12 mg/cm2 <= 0.08 Dermal: acute, local PROC14 3.0 PROC5, PROC8b. TRA Workers Worker (Indus-1.47 mg/m<sup>3</sup> 0.49 Inhalation: long-term, Liquid mixture 3.0 trial) systemic PROC5, PROC8b TRA Workers Inhalation: short-term, 5.89 mg/m<sup>3</sup> 0.33 3.0 systemic PROC5, PROC8b TRA Workers Dermal: long-term, 0.82 mg/kg bw/day 0.31 3.0 systemic PROC5, PROC8b TRA Workers Chronic dermal local <= 0.12 mg/cm2 <= 0.08 3.0 exposure PROC5, PROC8b <= 0.08 TRA Workers Dermal: acute, local <= 0.12 mg/cm2 3.0 PROC8a, Liquid mix-TRA Workers Worker (Indus-Inhalation: long-term, 0.42 mg/m<sup>3</sup> 0.14 ture 3.0 trial) systemic PROC8a TRA Workers Inhalation: short-term, 1.68 mg/m<sup>3</sup> 0.09 3.0 systemic PROC8a TRA Workers 1.65 mg/kg bw/day 0.61 Dermal: long-term, 3.0 systemic PROC8a TRA Workers 0.12 mg/cm2 0.08 Chronic dermal local 3.0 exposure PROC8a TRA Workers Dermal: acute, local 0.12 mg/cm2 0.08 3.0 PROC19, Liquid mix-TRA Workers Worker (Indus-Inhalation: long-term, 1.47 mg/m<sup>3</sup> 0.49 ture 3.0 trial) systemic PROC19 TRA Workers Inhalation: short-term, 5.89 mg/m<sup>3</sup> 0.33 3.0 systemic PROC19 TRA Workers Dermal: long-term, 1.12 mg/kg bw/d 0.42 3.0 systemic PROC19 0.6 mg/cm2 TRA Workers 0.38 Chronic dermal local 3.0 exposure PROC19 TRA Workers 0.6 mg/cm2 0.38 Dermal: acute, local 3.0

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

EUSES = EUSES version 2.1.1

according to Regulation (EC) No. 1907/2006



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#### **ES 20: Formulation**

## 1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Process categories : **PROC1:** Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC3: Use in closed batch process (synthesis or formula-

tion)

**PROC5:** Mixing or blending in batch processes for formulation of preparations and articles (multistage and/ or significant

contact)

**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 con-

tainers (dedicated filling line, including weighing)

PROC14: Production of preparations or articles by tabletting,

compression, extrusion, pelletisation **PROC15:** Use as laboratory reagent

Environmental Release Categories

Further information

: **ERC2:** Formulation of preparations

: Cosmetics Europe / COLIPA

#### 2.1 Contributing scenario controlling environmental exposure for: ERC2

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount per site (Msafe) : 18.5 t

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa: 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 2.5 %
Emission or Release Factor: Water : 2 %
Emission or Release Factor: Soil : 0.01 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

according to Regulation (EC) No. 1907/2006



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#### Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant

Flow rate of sewage treatment

plant effluent

: Municipal sewage treatment plant: 2,000 m3/d

. 2,000 1110/

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

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

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

#### 2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid substance

**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) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

# 2.3 Contributing scenario controlling worker exposure for: PROC2, PROC3, Liquid substance

**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) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

# 2.4 Contributing scenario controlling worker exposure for: PROC5, PROC8a, Liquid substance

**Product characteristics** 

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

Mixture/Article 100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

according to Regulation (EC) No. 1907/2006



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#### **Technical conditions and measures**

Provide appropriate exhaust ventilation at machinery. (Effectiveness (of a measure): 90 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)

## 2.5 Contributing scenario controlling worker exposure for: PROC8b, Liquid substance

#### **Product characteristics**

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

Mixture/Article

100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

#### **Technical conditions and measures**

Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). (Effectiveness (of a measure): 70 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

# 2.6 Contributing scenario controlling worker exposure for: PROC9, Liquid substance, PROC14, Solid mixture

#### **Product characteristics**

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

Mixture/Article 100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance
Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

#### Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

#### **Technical conditions and measures**

Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). (Effectiveness (of a measure): 70 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

according to Regulation (EC) No. 1907/2006



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### 2.7 Contributing scenario controlling worker exposure for: PROC8b, Liquid substance

**Product characteristics** 

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

Mixture/Article 100 % (unless stated differently).

Physical Form (at time of use) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

## 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC2	EUSES		Fresh water		0.009 mg/l	0.41
			Fresh water sedi- ment		0.09 mg/kg dry weight	0.41
			Marine water		0.0009 mg/l	0.41
			Marine sediment		0.009 mg/kg dry weight	0.41
			Sewage treatment plant		0.09 mg/l	< 0.01
			Soil		0.01 mg/kg dry weight	0.39

#### **Workers**

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1, Liquid sub- stance	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.07 mg/m <sup>3</sup>	0.02
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.28 mg/m <sup>3</sup>	0.02
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/kg bw/day	0.01
PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC2, PROC3, Liquid substance	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 2.10 mg/m <sup>3</sup>	<= 0.70
PROC2, PROC3	TRA Workers 3.0		Inhalation: short-term, systemic	<= 8.41 mg/m³	<= 0.47
PROC2, PROC3	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/d	<= 0.51
PROC2, PROC3	TRA Workers 3.0		Chronic dermal local exposure	0.20 mg/cm2	0.13

according to Regulation (EC) No. 1907/2006



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Version 4.0	Re	vision Date 18.	11.2019 D	ate of last issue: 02	2.10.2014
PROC2, PROC3	TRA Workers 3.0		Dermal: acute, local	0.20 mg/cm2	0.12
PROC5, PROC8b, Liquid substance	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC5, PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m³	<= 0.16
PROC5, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC5, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	<= 0.20 mg/cm2	<= 0.13
PROC5, PROC8b	TRA Workers 3.0		Dermal: acute, local	<= 0.20 mg/cm2	<= 0.13
PROC8b, Liquid sub- stance	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.07 mg/m <sup>3</sup>	0.02
PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	0.28 mg/m <sup>3</sup>	0.02
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.03 mg/kg bw/day	0.01
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC9, Liquid sub- stance, PROC14, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.05 mg/m³	0.35
PROC9, PROC14	TRA Workers 3.0		Inhalation: short-term, systemic	4.21 mg/m³	0.23
PROC9, PROC14	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC9, PROC14	TRA Workers 3.0		Chronic dermal local exposure	<= 0.20 mg/cm2	<= 0.13
PROC9, PROC14	TRA Workers 3.0		Dermal: acute, local	<= 0.20 mg/cm2	<= 0.13
PROC8b, Liquid sub- stance	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	2.45 mg/m <sup>3</sup>	0.82
PROC8b	TRA Workers 3.0		Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	0.34 mg/kg bw/day	0.13
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06

assumes operating temperature: <= 40 °C

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

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

EUSES = EUSES version 2.1.1



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Version 4.0 Revision Date 18.11.2019 Date of last issue: 02.10.2014

## ES 21: (AISE) Industrial use of detergents and maintenance products / Indoor

1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC35:** Washing and cleaning products (including solvent

based products)

Process categories : PROC1: Use in closed process, no likelihood of exposure

PROC2: Use in closed, continuous process with occasional

controlled exposure

PROC4: Use in batch and other process (synthesis) where

opportunity for exposure arises **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

PROC10: Roller application or brushing

PROC13: Treatment of articles by dipping and pouring

Environmental Release Categories : ERC4: Industrial use of processing aids in processes and

products, not becoming part of articles

Further information : AISE = International Association for Soaps, Detergents and

Maintenance Products

#### 2.1 Contributing scenario controlling environmental exposure for: ERC4

: 850 kg

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount for wide disperse

uses (Msafe)

(Msafe)

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 250 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa-

: 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 100 % Emission or Release Factor: Water : 100 % Emission or Release Factor: Soil : 5 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

according to Regulation (EC) No. 1907/2006



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Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant Flow rate of sewage treatment

: Municipal sewage treatment plant

: 2,000 m3/d

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

2.2 Contributing scenario controlling worker exposure for: PROC1, Liquid substance

**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) : Liquid substance

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.3 Contributing scenario controlling worker exposure for: PROC1, Solid mixture

Activity : Manufacturing equipment maintenance: cleaning manufactur-

ing equipment for maintenance purposes

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

2.4 Contributing scenario controlling worker exposure for: PROC2, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

> MSDS GB/EN 199 / 234

according to Regulation (EC) No. 1907/2006



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# 2.5 Contributing scenario controlling worker exposure for: PROC4, PROC8a, PROC8b, PROC13, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

## 2.6 Contributing scenario controlling worker exposure for: PROC7, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). (Effectiveness (of a measure): 70 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 95 %)

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

#### 2.7 Contributing scenario controlling worker exposure for: PROC10, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

according to Regulation (EC) No. 1907/2006



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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear suitable gloves tested to EN374.

# 2.8 Contributing scenario controlling worker exposure for: PROC8a, PROC8b, Solid mixture

#### **Product characteristics**

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

## 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC8a	EUSES		Fresh water		0.02 mg/l	0.92
			Fresh water sedi- ment		0.21 mg/kg dry weight	0.92
			Marine water		0.002 mg/l	0.92
			Marine sediment		0.02 mg/kg dry weight	0.92
			Sewage treatment plant		0.21 mg/l	0.02
			Soil		0.03 mg/kg dry weight	0.89

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC1, Liquid sub- stance	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.07 mg/m³	0.02
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.28 mg/m <sup>3</sup>	0.02
PROC1			Dermal: long-term, systemic	0.03 mg/kg bw/day	0.01
PROC1			Chronic dermal local exposure	0.01 mg/cm2	< 0.01
PROC1			Dermal: acute, local	0.01 mg/cm2	< 0.01
PROC1, Solid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.007 mg/m³	< 0.01
PROC1	TRA Workers 3.0		Inhalation: short-term, systemic	0.03 mg/m <sup>3</sup>	< 0.01
PROC1	TRA Workers 3.0		Dermal: long-term, systemic	0.003 mg/kg bw/day	< 0.01

according to Regulation (EC) No. 1907/2006



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PROC1	TRA Workers 3.0		Chronic dermal local exposure	0.001 mg/cm2	< 0.01
PROC1	TRA Workers 3.0		Dermal: acute, local	0.001 mg/cm2	< 0.01
PROC2, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC2	TRA Workers 3.0		Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC2	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC2	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC2	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC4, PROC8a, PROC8b, PROC13, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC4, PROC8a, PROC8b, PROC13	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC4, PROC8a, PROC8b, PROC13	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a, PROC8b, PROC13	TRA Workers 3.0		Chronic dermal local exposure	<= 0.2 mg/cm2	<= 0.13
PROC4, PROC8a, PROC8b, PROC13	TRA Workers 3.0		Dermal: acute, local	<= 0.2 mg/cm2	<= 0.13
PROC7, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.05 mg/m³	0.35
PROC7	TRA Workers 3.0		Inhalation: short-term, systemic	4.21 mg/m³	0.23
PROC7			Dermal: long-term, systemic	0.86 mg/kg bw/day	0.32
PROC7			Chronic dermal local exposure	0.04 mg/cm2	0.03
PROC7			Dermal: acute, local	0.04 mg/cm2	0.03
PROC10, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC10	TRA Workers 3.0		Inhalation: short-term, systemic	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC10			Dermal: long-term, systemic	<= 0.55 mg/kg bw/day	<= 0.20
PROC10			Chronic dermal local exposure	<= 0.04 mg/cm2	<= 0.03
PROC10			Dermal: acute, local	<= 0.04 mg/cm2	<= 0.03
PROC8a, PROC8b, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.70 mg/m <sup>3</sup>	<= 0.23
PROC8a, PROC8b	TRA Workers 3.0	,	Inhalation: short-term, systemic	<= 2.81 mg/m <sup>3</sup>	<= 0.16
PROC8a, PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC8a, PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8a, PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

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

according to Regulation (EC) No. 1907/2006



Ethyllinalool5011728Version 4.0Revision Date 18.11.2019Date of last issue: 02.10.2014

EUSES = EUSES version 2.1.1

according to Regulation (EC) No. 1907/2006



# Ethyllinalool 5011728

Version 4.0 Revision Date 18.11.2019 Date of last issue: 02.10.2014

## ES 22: (AISE) Industrial use of detergents and maintenance products / Outdoor

1. Scenario description

Main User Groups : SU 3: Industrial uses: Uses of substances as such or in prep-

arations at industrial sites

Chemical product category : **PC35:** Washing and cleaning products (including solvent

based products)

Process categories : PROC4: Use in batch and other process (synthesis) where

opportunity for exposure arises **PROC7:** Industrial spraying

**PROC8a:** Transfer of substance or preparation (charging/discharging) from/ to vessels/ large containers at non-

dedicated facilities

PROC10: Roller application or brushing

Environmental Release Categories : ERC4: Industrial use of processing aids in processes and

products, not becoming part of articles

Further information : AISE = International Association for Soaps, Detergents and

Maintenance Products

#### 2.1 Contributing scenario controlling environmental exposure for: ERC4

: 850 kg

Activity : Out-door use

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Annual amount for wide disperse

uses (Msafe)

Remarks : Msafe is the maximum amount of substance or product which

may be used safely under the conditions defined in the envi-

ronmental part of the exposure scenario.

Frequency and duration of use

Continuous exposure : 220 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa-

ter

: 18,000 m3/d

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 100 % Emission or Release Factor: Water : 0.0 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

plant effluent

Effectiveness (of a measure)

: 2,000 m3/d

: 87.7 %

according to Regulation (EC) No. 1907/2006



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Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

# 2.2 Contributing scenario controlling worker exposure for: PROC4, PROC8a, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture / Article

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture, Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

## 2.3 Contributing scenario controlling worker exposure for: PROC7, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 95 %)

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

#### 2.4 Contributing scenario controlling worker exposure for: PROC8a, Solid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

according to Regulation (EC) No. 1907/2006



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## 2.5 Contributing scenario controlling worker exposure for: PROC10, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

## 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC4	EUSES		Fresh water		0.02 mg/l	0.92
			Fresh water sedi- ment		0.21 mg/kg dry weight	0.92
			Marine water		0.002 mg/l	0.92
			Marine sediment		0.02 mg/kg dry weight	0.92
			Sewage treatment plant		0.21 mg/l	0.02
			Soil		0.03 mg/kg dry weight	0.88

#### **Workers**

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC4, PROC8a, Liquid mixture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	<= 0.49 mg/m <sup>3</sup>	<= 0.16
PROC4, PROC8a	TRA Workers 3.0		Inhalation: short-term, systemic	<= 1.96 mg/m <sup>3</sup>	<= 0.11
PROC4, PROC8a	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a	TRA Workers 3.0		Chronic dermal local exposure	<= 0.1 mg/cm2	<= 0.06
PROC4, PROC8a	TRA Workers 3.0		Dermal: acute, local	<= 0.1 mg/cm2	<= 0.06
PROC7, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC7	TRA Workers 3.0		Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC7			Dermal: long-term, systemic	0.86 mg/kg bw/day	0.32
PROC7			Chronic dermal local exposure	0.04 mg/cm2	0.03

according to Regulation (EC) No. 1907/2006



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PROC7			Dermal: acute, local	0.04 mg/cm2	0.03
PROC8a, Solid mix-	TRA Workers	Worker (Indus-	Inhalation: long-term,	0.49 mg/m <sup>3</sup>	0.16
ture	3.0	trial)	systemic		
PROC8a	TRA Workers		Inhalation: short-term,	1.96 mg/m <sup>3</sup>	0.11
	3.0		systemic		
PROC8a	TRA Workers		Dermal: long-term,	1.37 mg/kg bw/day	0.51
	3.0		systemic		
PROC8a	TRA Workers		Chronic dermal local	0.1 mg/cm2	0.06
	3.0		exposure		
PROC8a	TRA Workers		Dermal: acute, local	0.1 mg/cm2	0.06
	3.0				
PROC10, Liquid mix-	TRA Workers	Worker (Indus-	Inhalation: long-term,	0.49 mg/m <sup>3</sup>	0.16
ture	3.0	trial)	systemic		
PROC10	TRA Workers		Inhalation: short-term,	1.96 mg/m <sup>3</sup>	0.11
	3.0		systemic		
PROC10			Dermal: long-term,	0.55 mg/kg bw/day	0.20
			systemic		
PROC10			Chronic dermal local	0.04 mg/cm2	0.03
			exposure		
PROC10			Dermal: acute, local	0.04 mg/cm2	0.03

assumes operating temperature: <= 40 °C

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

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

EUSES = EUSES version 2.1.1

according to Regulation (EC) No. 1907/2006



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## ES 23: (AISE) Professional use in cleaning agents / Indoor

1. Scenario description

Main User Groups : SU 22: Professional uses: Public domain (administration, ed-

ucation, entertainment, services, craftsmen)

Chemical product category : PC35: Washing and cleaning products (including solvent

based products)

: PROC4: Use in batch and other process (synthesis) where Process categories

opportunity for exposure arises

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

PROC10: Roller application or brushing PROC11: Non industrial spraying

PROC13: Treatment of articles by dipping and pouring PROC19: Hand-mixing with intimate contact and only PPE

available

**Environmental Release Categories** : **ERC8a**: Wide dispersive indoor use of processing aids in

open systems

Further information AISE = International Association for Soaps, Detergents and

Maintenance Products

## 2.1 Contributing scenario controlling environmental exposure for: ERC8a

Activity : In-door use

**Product characteristics** 

Viscosity, dynamic 7.28 mPa.s (at 20 °C)

Frequency and duration of use

Continuous exposure : 365 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa- : 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 100 % Emission or Release Factor: Water : 100 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

plant effluent

Effectiveness (of a measure) : 87.7 %

: 2,000 m3/d

MSDS\_GB / EN 208 / 234

according to Regulation (EC) No. 1907/2006



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Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

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

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

# 2.2 Contributing scenario controlling worker exposure for: PROC4, PROC8b, PROC13, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

# 2.3 Contributing scenario controlling worker exposure for: PROC8a, PROC8b, PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Solid mixture
Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection.

#### 2.4 Contributing scenario controlling worker exposure for: PROC10, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

#### Other operational conditions affecting workers exposure

according to Regulation (EC) No. 1907/2006



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Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear suitable gloves tested to EN374. (Effectiveness (of a measure): 80 %)

## 2.5 Contributing scenario controlling worker exposure for: PROC11, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 95 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

### 2.6 Contributing scenario controlling worker exposure for: PROC19, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 2.7 Contributing scenario controlling worker exposure for: PROC8b, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

according to Regulation (EC) No. 1907/2006



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Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

#### 2.8 Contributing scenario controlling worker exposure for: PROC19, Solid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

#### 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC8a	EUSES		Fresh water		0.0005 mg/l	0.02
			Fresh water sedi- ment		0.005 mg/kg dry weight	0.02
			Marine water		0.00005 mg/l	0.02
			Marine sediment		0.0005 mg/kg dry weight	0.02
			Sewage treatment plant		0.003 mg/l	< 0.01
			Soil		0.0005 mg/kg dry weight	0.02

#### Workers

Contributing Scenario	Exposure Assessment Method	Specific condi- tions	Value	Level of Exposure	RCR
PROC4, PROC8b, PROC13, Liquid mix- ture	TRA Workers 3.0	Worker (Pro- fessional)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC4, PROC8b,	TRA Workers		Inhalation: short-term,	<= 2.81 mg/m <sup>3</sup>	<= 0.16

according to Regulation (EC) No. 1907/2006



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PROC13	3.0		systemic		
PROC4, PROC8b, PROC13	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8b, PROC13	TRA Workers 3.0		Chronic dermal local exposure	<= 0.2 mg/cm2	<= 0.13
PROC4, PROC8b, PROC13	TRA Workers 3.0		Dermal: acute, local	<= 0.2 mg/cm2	<= 0.13
PROC8a, Liquid mix- ture, Solid mixture	TRA Workers 3.0	Worker (Pro- fessional)	Inhalation: long-term, systemic	1.23 mg/m³	0.41
PROC8a	TRA Workers 3.0	Toddidiaiy	Inhalation: short-term, systemic	4.91 mg/m³	0.27
PROC8a	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC8a	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8a	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC10, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.75 mg/m³	0.58
PROC10	TRA Workers 3.0	,	Inhalation: short-term, systemic	7.01 mg/m³	0.39
PROC10	TRA Workers 3.0		Dermal: long-term, systemic	0.55 mg/kg bw/day	0.20
PROC10	TRA Workers 3.0		Chronic dermal local exposure	0.04 mg/cm2	0.03
PROC10	TRA Workers 3.0		Dermal: acute, local	0.04 mg/cm2	0.03
PROC11, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.2 mg/m³	0.4
PROC11	TRA Workers 3.0	, ,	Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC11	TRA Workers 3.0		Dermal: long-term, systemic	1.07 mg/kg bw/day	0.40
PROC11	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC11	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
PROC19, Liquid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.23 mg/m³	0.41
PROC19	TRA Workers 3.0		Inhalation: short-term, systemic	4.91 mg/m³	0.27
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC19	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
PROC8b, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	0.70 mg/m <sup>3</sup>	0.23
PROC8b	TRA Workers 3.0	iiai)	Inhalation: short-term, systemic	2.81 mg/m³	0.16
PROC8b	TRA Workers 3.0		Dermal: long-term, systemic	1.37 mg/kg bw/day	0.51
PROC8b	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC8b	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC19, Solid mix- ture	TRA Workers 3.0	Worker (Indus- trial)	Inhalation: long-term, systemic	1.23 mg/m³	0.41
PROC19	TRA Workers 3.0		Inhalation: short-term, systemic	4.91 mg/m³	0.27
PROC19	TRA Workers 3.0		Dermal: long-term, systemic	1.41 mg/kg bw/d	0.52
PROC19	TRA Workers		Chronic dermal local	0.05 mg/cm2	0.03

according to Regulation (EC) No. 1907/2006



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	3.0	exposure		
PROC19	TRA Workers	Dermal: acute, local	0.05 mg/cm2	0.03
	3.0		_	

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

assumes operating temperature: <= 40 °C

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

EUSES = EUSES version 2.1.1

according to Regulation (EC) No. 1907/2006



# Ethyllinalool

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## ES 24: Professional outdoor use of detergents and maintenance products (AISE)

1. Scenario description

Main User Groups : SU 22: Professional uses: Public domain (administration, ed-

ucation, entertainment, services, craftsmen)

: PC35: Washing and cleaning products (including solvent Chemical product category

based products)

Process categories : PROC4: Use in batch and other process (synthesis) where

opportunity for exposure arises

PROC8a: Transfer of substance or preparation (charging/ discharging) from/ to vessels/ large containers at non-

dedicated facilities

PROC10: Roller application or brushing PROC11: Non industrial spraying

: **ERC8d:** Wide dispersive outdoor use of processing aids in **Environmental Release Categories** 

open systems

Further information AISE = International Association for Soaps, Detergents and

Maintenance Products

## 2.1 Contributing scenario controlling environmental exposure for: ERC8d

Activity : Out-door use

**Product characteristics** 

Viscosity, dynamic 7.28 mPa.s (at 20 °C)

**Amount used** 

Daily amount for wide dispersive : 0.55 kg

uses

Remarks : amount used for the exposure estimation

Frequency and duration of use

Continuous exposure : 365 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa-

: 18,000 m3/d

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 100 % Emission or Release Factor: Water : 100 % Emission or Release Factor: Soil : 20.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

: 2,000 m3/d

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

> MSDS GB/EN 214 / 234

according to Regulation (EC) No. 1907/2006



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local regulations.

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

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

## 2.2 Contributing scenario controlling worker exposure for: PROC4, PROC8a, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

## 2.3 Contributing scenario controlling worker exposure for: PROC11, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 4 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

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

Wear respiratory protection. (Effectiveness (of a measure): 95 %)

Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training.

(Effectiveness (of a measure): 90 %)

### 2.4 Contributing scenario controlling worker exposure for: PROC4, PROC8a, Solid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Solid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Outdoor use

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

MSDS GB/EN 215 / 234

according to Regulation (EC) No. 1907/2006



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Wear respiratory protection. (Effectiveness (of a measure): 90 %)

## 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC8d	EUSES		Fresh water		0.0005 mg/l	0.02
			Fresh water sedi-		0.005 mg/kg dry	0.02
			ment		weight	
			Marine water		0.00005 mg/l	0.02
			Marine sediment		0.0005 mg/kg dry	0.02
					weight	
			Sewage treatment		0.003 mg/l	< 0.01
			plant			
			Soil		0.0005 mg/kg dry weight	0.02

### Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC4, PROC8a, Liquid mixture	TRA Workers 3.0	Worker (Pro- fessional)	Inhalation: long-term, systemic	<= 1.23 mg/m <sup>3</sup>	<= 0.27
PROC4, PROC8a	TRA Workers 3.0		Inhalation: short-term, systemic	<= 4.91 mg/m³	<= 0.27
PROC4, PROC8a	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06
PROC11, Liquid mix- ture	TRA Workers 3.0	Worker (Pro- fessional)	Inhalation: long-term, systemic	1.47 mg/m³	0.49
PROC11	TRA Workers 3.0		Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC11	TRA Workers 3.0		Dermal: long-term, systemic	1.07 mg/kg bw/day	0.40
PROC11	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC11	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03
PROC4, PROC8a, Solid mixture	TRA Workers 3.0	Worker (Pro- fessional)	Inhalation: long-term, systemic	<= 1.23 mg/m³	<= 0.41
PROC4, PROC8a	TRA Workers 3.0		Inhalation: short-term, systemic	<= 4.91 mg/m³	<= 0.27
PROC4, PROC8a	TRA Workers 3.0		Dermal: long-term, systemic	<= 1.37 mg/kg bw/day	<= 0.51
PROC4, PROC8a	TRA Workers 3.0		Chronic dermal local exposure	0.1 mg/cm2	0.06
PROC4, PROC8a	TRA Workers 3.0		Dermal: acute, local	0.1 mg/cm2	0.06

assumes operating temperature: <= 40 °C

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

according to Regulation (EC) No. 1907/2006



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

according to Regulation (EC) No. 1907/2006



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# ES 25: Professional use Polishes and wax blends (AISE)

1. Scenario description

Main User Groups : SU 22: Professional uses: Public domain (administration, ed-

ucation, entertainment, services, craftsmen)

Chemical product category : PC31: Polishes and wax blends

Process categories : PROC8a: Transfer of substance or preparation (charging/

discharging) from/ to vessels/ large containers at non-

dedicated facilities

**PROC10:** Roller application or brushing **PROC11:** Non industrial spraying

Environmental Release Categories : ERC8a: Wide dispersive indoor use of processing aids in

open systems

Further information : AISE = International Association for Soaps, Detergents and

Maintenance Products

# 2.1 Contributing scenario controlling environmental exposure for: ERC8a

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Frequency and duration of use

Continuous exposure : 365 days/year

Environment factors not influenced by risk management

Flow rate of receiving surface wa- : 18,000 m3/d

ter

Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 100 % Emission or Release Factor: Water : 100 % Emission or Release Factor: Soil : 0.0 %

Technical conditions and measures / Organizational measures

Water : All contaminated waste water must be processed in an indus-

trial or municipal wastewater treatment plant that incorporates

both primary and secondary treatments.

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

: 2,000 m3/d

plant effluent

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

# 2.2 Contributing scenario controlling worker exposure for: PROC8a, Liquid mixture

218 / 234 MSDS GB / EN

according to Regulation (EC) No. 1907/2006



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**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide adequate ventilation. (Effectiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.3 Contributing scenario controlling worker exposure for: PROC10, Liquid mixture

**Product characteristics** 

Concentration of the Substance in : Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). (Effec-

tiveness (of a measure): 30 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 90 %)

2.4 Contributing scenario controlling worker exposure for: PROC11, Liquid mixture

**Product characteristics** 

Concentration of the Substance in

: Covers percentage substance in the product up to 1 %.

Mixture/Article

Physical Form (at time of use) : Liquid mixture

Frequency and duration of use

Frequency of use : <= 8 hours/day

Other operational conditions affecting workers exposure

Outdoor / Indoor : Indoor use

**Technical conditions and measures** 

Provide a good standard of general or controlled ventilation (5 to 15 air changes per hour). (Effec-

tiveness (of a measure): 70 %)

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

Wear respiratory protection. (Effectiveness (of a measure): 95 %)

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Wear chemically resistant gloves (tested to EN374) in combination with 'basic' employee training. (Effectiveness (of a measure): 90 %)

# 3. Exposure estimation and reference to its source

#### **Environment**

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Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC8a	EUSES		Fresh water		0.0005 mg/l	0.02
			Fresh water sedi-		0.005 mg/kg dry	0.02
			ment		weight	
			Marine water		0.00005 mg/l	0.02
			Marine sediment		0.0005 mg/kg dry weight	0.02
			Sewage treatment plant		0.003 mg/l	< 0.01
			Soil		0.0005 mg/kg dry weight	0.02

## Workers

Contributing Scenario	Exposure Assessment Method	Specific conditions	Value	Level of Exposure	RCR
PROC8a, Liquid mix- ture	TRA Workers 3.0	Worker (Pro- fessional)	Inhalation: long-term, systemic	2.45 mg/m <sup>3</sup>	0.82
PROC8a	TRA Workers 3.0		Inhalation: short-term, systemic	9.82 mg/m³	0.55
PROC8a	TRA Workers 3.0		Dermal: long-term, systemic	0.14 mg/kg bw/day	0.05
PROC8a	TRA Workers 3.0		Chronic dermal local exposure	0.02 mg/cm2	0.01
PROC8a	TRA Workers 3.0		Dermal: acute, local	0.02 mg/cm2	0.01
PROC10, Liquid mix- ture	TRA Workers 3.0	Worker (Pro- fessional)	Inhalation: long-term, systemic	1.75 mg/m³	0.58
PROC10	TRA Workers 3.0		Inhalation: short-term, systemic	7.01 mg/m <sup>3</sup>	0.39
PROC10	TRA Workers 3.0		Dermal: long-term, systemic	0.55 mg/kg bw/day	0.20
PROC10	TRA Workers 3.0		Chronic dermal local exposure	0.04 mg/cm2	0.03
PROC10	TRA Workers 3.0		Dermal: acute, local	0.04 mg/cm2	0.03
PROC11, Liquid mix- ture	TRA Workers 3.0	Worker (Pro- fessional)	Inhalation: long-term, systemic	1.05 mg/m³	0.35
PROC11	TRA Workers 3.0		Inhalation: short-term, systemic	4.21 mg/m³	0.23
PROC11	TRA Workers 3.0		Dermal: long-term, systemic	1.07 mg/kg bw/day	0.40
PROC11	TRA Workers 3.0		Chronic dermal local exposure	0.05 mg/cm2	0.03
PROC11	TRA Workers 3.0		Dermal: acute, local	0.05 mg/cm2	0.03

assumes operating temperature: <= 40 °C

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

> MSDS GB/EN 220 / 234

according to Regulation (EC) No. 1907/2006



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

according to Regulation (EC) No. 1907/2006



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# ES 26: Consumer Washing and cleaning products (including solvent based products) (AISE)

#### 1. Scenario description

Main User Groups : **SU 21:** Consumer uses: Private households (= general public

= consumers)

: **PC35:** Washing and cleaning products (including solvent Chemical product category

based products)

: ERC8d, ERC8a: Wide dispersive outdoor use of processing **Environmental Release Categories** 

aids in open systems, Wide dispersive indoor use of pro-

cessing aids in open systems

Further information : AISE = International Association for Soaps, Detergents and

Maintenance Products

#### 2.1 Contributing scenario controlling environmental exposure for: ERC8d

**Product characteristics** 

Viscosity, dynamic 7.28 mPa.s (at 20 °C)

Frequency and duration of use

Continuous exposure : 365 days/year

Environment factors not influenced by risk management

: 18,000 m3/d Flow rate

#### Other given operational conditions affecting environmental exposure

Wide dispersive outdoor use of

processing aids in open systems

Emission or Release Factor: Air : 100 % Emission or Release Factor: Water : 100 % Emission or Release Factor: Soil : 20 %

Wide dispersive indoor use of pro-

cessing aids in open systems

Emission or Release Factor: Air : 100 % Emission or Release Factor: Water : 100 % Emission or Release Factor: Soil : 0%

#### Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

plant effluent

: 2,000 m3/d

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

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

: Dispose of as hazardous waste in compliance with local and Disposal methods

national regulations.

# 2.2 Contributing scenario controlling consumer exposure for: PC35, PC35/1

Activity : Laundry and dish washing products

**Product characteristics** 

Concentration of the Substance in Mixture/Article

: Covers the percentage of the substance in the product up to

0.05%.

222 / 234 MSDS GB/EN

according to Regulation (EC) No. 1907/2006



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Physical Form (at time of use) : Liquid mixture, Solid mixture

**Amount used** 

Amount per event : 0.05 kg

Frequency and duration of use

Exposure duration per day : 1 h

Frequency of use : 365 days/year

2.3 Contributing scenario controlling consumer exposure for: PC35, PC35/2

Activity : Cleaners, liquids (all purpose cleaners, sanitary products, floor

cleaners, glass cleaners, carpet cleaners, metal cleaners)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to

0.25%., Automotive care (spray, liquid)

: Covers the percentage of the substance in the product up to

0.1%., other uses

Physical Form (at time of use) : Liquid mixture, Solid mixture

**Amount used** 

Amount per event : 17 g

Remarks : Surface cleaning

: 80 g Amount per event

: Toilet cleaners (powder, liquid, gel, tablet) for consumer use Remarks

Amount per event : 688 g

Remarks : Carpet cleaners (spray, liquid) for consumer use, High pres-

sure washers/cleaners

Amount per event : 1300 a

Remarks : Automotive care (spray, liquid)

Frequency and duration of use

Exposure duration per day : 0.33 h

0.33 hours/day Frequency of use Surface cleaning Remarks

Exposure duration per day 1 h

Frequency of use 1 Events per day

Remarks Toilet cleaners (powder, liquid, gel, tablet) for consumer use,

> Carpet cleaners (spray, liquid) for consumer use, High pressure washers/cleaners, Automotive care (spray, liquid)

2.4 Contributing scenario controlling consumer exposure for: PC35, PC35/3

Activity : Cleaners, trigger sprays (all purpose cleaners, sanitary prod-

ucts, glass cleaners), Surface cleaning

**Product characteristics** 

Concentration of the Substance in

: Covers the percentage of the substance in the product up to

5%., Surface cleaning

: Liquid mixture, Solid mixture Physical Form (at time of use)

Amount used

Mixture/Article

Amount per event 53 g

Remarks : Surface cleaning

Frequency and duration of use

Exposure duration per day : 4 h

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Frequency of use : 1 Events per day Remarks : Surface cleaning

# 2.5 Contributing scenario controlling consumer exposure for: PC35, PC35/4

Activity : Cleaners, liquids (all purpose cleaners, sanitary products, floor

cleaners, glass cleaners, carpet cleaners, metal cleaners)

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

Concentration of the Substance in

Mixture/Article

: Covers the percentage of the substance in the product up to 0.25%.. Automotive care (spray, liquid)

0.25 %., Automotive care (spray, liquid)

: Covers the percentage of the substance in the product up to 0.1%., Oven cleaners, Carpet cleaners (spray, liquid) for con-

sumer use

Physical Form (at time of use) : Liquid mixture

**Amount used** 

Amount per event : 35 g

Remarks : Oven cleaners (spray, trigger) for consumer use

Amount per event : 35 g

Remarks : Carpet cleaners (spray, liquid) for consumer use

Amount per event : 35 g

Remarks : Automotive care (spray, liquid)

Frequency and duration of use

Exposure duration per day : 4 h

Frequency of use : 1 Events per day

Remarks : Oven cleaners (spray, trigger) for consumer use, Carpet

cleaners (spray, liquid) for consumer use, Automotive care

(spray, liquid)

# 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC8d	EUSES		Fresh water		0.001 mg/l	0.05
			Fresh water sedi-		0.01 mg/kg dry	0.05
			ment		weight	
			Marine water		0.0001 mg/l	0.05
			Marine sediment		0.001 mg/kg dry weight	0.05
			Sewage treatment		0.01 mg/l	< 0.01
			plant			
			Soil	·	0.001 mg/kg dry weight	0.04

#### Consumers

Contributing Sce- nario	Exposure Assessment Method	Specific con- ditions	Value	Level of Expo- sure	RCR
PC35/1	EGRET 2	Consumers	Inhalation: long- term, systemic	0.68 mg/m <sup>3</sup>	0.91

according to Regulation (EC) No. 1907/2006



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PC35/1	EGRET 2		Dermal: long-term, systemic	0.06 mg/kg bw/day	0.04
PC35/1	EGRET 2		Chronic dermal local exposure	0 mg/cm2	< 0.01
PC35/1	EGRET 2		Dermal: acute, local	0 mg/cm2	< 0.01
PC35/1	Extended TRA		Oral exposure	0 mg/kg bw/day	< 0.01
PC35/2	EGRET 2	Consumers	Inhalation: long- term, systemic	<= 0.09 mg/m <sup>3</sup>	<= 0.13
PC35/2	EGRET 2		Dermal: long-term, systemic	<= 0.03 mg/kg bw/day	<= 0.02
PC35/2	EGRET 2		Chronic dermal local exposure	<= 0.003 mg/cm2	<= 0.01
PC35/2	EGRET 2		Dermal: acute, local	<= 0.003 mg/cm2	<= 0.01
PC35/2	Extended TRA		Oral exposure	0 mg/kg bw/day	< 0.01
PC35/3	EGRET 2	Consumers	Inhalation: long- term, systemic	0.15 mg/m <sup>3</sup>	0.20
PC35/3	EGRET 2		Dermal: long-term, systemic	0.02 mg/kg bw/day	0.01
PC35/3	EGRET 2		Chronic dermal local exposure	0.0005 mg/cm2	< 0.01
PC35/3	EGRET 2		Dermal: acute, local	0.0005 mg/cm2	< 0.01
PC35/3	Extended TRA		Oral exposure	0 mg/kg bw/day	< 0.01
PC35/4	ConsExpo	Consumers	Inhalation: long- term, systemic	<= 0.66 mg/m <sup>3</sup>	<= 0.89
PC35/4	ConsExpo		Dermal: long-term, systemic	<= 0.01 mg/kg bw/day	< 0.01
PC35/4	ConsExpo		Chronic dermal local exposure	<= 0.003 mg/cm2	< 0.01
PC35/4	ConsExpo		Dermal: acute, local	<= 0.003 mg/cm2	< 0.01
PC35/4	Extended TRA		Oral exposure	0 mg/kg bw/day	< 0.01

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

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

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# ES 27: Consumer use of air care products (AISE)

#### 1. Scenario description

Main User Groups : SU 21: Consumer uses: Private households (= general public

= consumers)

Chemical product category : **PC3:** Air care products

Environmental Release Categories : ERC8d: Wide dispersive outdoor use of processing aids in

open systems

Further information : AISE = International Association for Soaps, Detergents and

Maintenance Products

## 2.1 Contributing scenario controlling environmental exposure for: ERC8d

Amount used

Daily amount for wide dispersive : 0.55 kg

uses

Remarks : amount used for the exposure estimation

Frequency and duration of use

Continuous exposure : 365 days/year

Environment factors not influenced by risk management

Flow rate : 18,000 m3/d

## Other given operational conditions affecting environmental exposure

Wide dispersive outdoor use of

processing aids in open systems

Emission or Release Factor: Air : 100 % Emission or Release Factor: Water : 100 % Emission or Release Factor: Soil : 20 %

Wide dispersive indoor use of pro-

cessing aids in open systems

Emission or Release Factor: Air : 100 % Emission or Release Factor: Water : 100 % Emission or Release Factor: Soil : 0 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

plant effluent

: 2,000 m3/d

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

# 2.2 Contributing scenario controlling consumer exposure for: PC8

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture, Solid mixture

**Amount used** 

Amount per event : 50 g

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according to Regulation (EC) No. 1907/2006



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Remarks : Pest control products - electrical evaporator

Amount per event : 6 g

Remarks : other uses

Frequency and duration of use

Exposure duration per day : 8 h

Remarks : Pest control products - electrical evaporator

Exposure duration per day : 0.25 h
Remarks : other uses

## 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC8d	EUSES		Fresh water		0.0005 mg/l	0.02
			Fresh water sedi-		0.005 mg/kg dry	0.02
			ment		weight	
			Marine water		0.00005 mg/l	0.02
			Marine sediment		0.0005 mg/kg dry weight	0.02
			Sewage treatment plant		0.003 mg/l	< 0.01
			Soil		0.0005 mg/kg dry weight	0.02

#### **Consumers**

Contributing Sce- nario	Exposure Assessment Method	Specific con- ditions	Value	Level of Expo- sure	RCR
PC8	ConsExpo	Consumers	Inhalation: long- term, systemic	<= 0.03 mg/m <sup>3</sup>	<= 0.03
	ConsExpo		Dermal: long-term, systemic	<= 1.0 mg/kg bw/day	<= 0.71
	ConsExpo		Chronic dermal local exposure	<= 0.02 mg/cm2	<= 0.02
	ConsExpo		Dermal: acute, local	<= 0.02 mg/kg bw/day	<= 0.02
	Extended TRA		Oral exposure	0 mg/cm2	< 0.01

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

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

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# Ethyllinalool

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#### ES 28: Biocides (AISE)

# 1. Scenario description

Main User Groups : SU 21: Consumer uses: Private households (= general public

= consumers)

Chemical product category : **PC8:** Biocidal products (e.g. Disinfectants, pest control)

**Environmental Release Categories** : ERC8d, ERC8a: Wide dispersive outdoor use of processing

aids in open systems, Wide dispersive indoor use of pro-

cessing aids in open systems

: AISE = International Association for Soaps, Detergents and Further information

Maintenance Products

#### 2.1 Contributing scenario controlling environmental exposure for: ERC8d

Amount used

Daily amount for wide dispersive

uses

: 0.55 kg

: amount used for the exposure estimation Remarks

Frequency and duration of use

Continuous exposure : 365 days/year

Environment factors not influenced by risk management

: 18,000 m3/d Flow rate

#### Other given operational conditions affecting environmental exposure

Wide dispersive outdoor use of processing aids in open systems

Emission or Release Factor: Air : 100 % Emission or Release Factor: Water : 100 % Emission or Release Factor: Soil : 20 %

Wide dispersive indoor use of pro-

cessing aids in open systems

Emission or Release Factor: Air : 100 % Emission or Release Factor: Water : 100 % Emission or Release Factor: Soil : 0%

#### Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant : 2,000 m3/d

Flow rate of sewage treatment

plant effluent

Effectiveness (of a measure)

: 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

## 2.2 Contributing scenario controlling consumer exposure for: PC8

**Product characteristics** 

Concentration of the Substance in

Mixture/Article

: Covers percentage substance in the product up to 1 %.

Physical Form (at time of use) : Liquid mixture, Solid mixture

#### **Amount used**

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Amount per event : 50 g

Remarks : Pest control products - electrical evaporator

Amount per event : 6 g

Remarks : other uses

Frequency and duration of use

Exposure duration per day : 8 h

Remarks : Pest control products - electrical evaporator

Exposure duration per day : 0.25 h
Remarks : other uses

## 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC8d	EUSES		Fresh water		0.0005 mg/l	0.02
			Fresh water sedi-		0.005 mg/kg dry	0.02
			ment		weight	
			Marine water		0.00005 mg/l	0.02
			Marine sediment		0.0005 mg/kg dry	0.02
					weight	
			Sewage treatment		0.003 mg/l	< 0.01
			plant			
			Soil		0.0005 mg/kg dry	0.02
					weight	

# Consumers

Contributing Sce- nario	Exposure Assessment Method	Specific con- ditions	Value	Level of Expo- sure	RCR
PC8	ConsExpo	Consumers	Inhalation: long- term, systemic	<= 0.03 mg/m³	<= 0.03
	ConsExpo		Dermal: long-term, systemic	<= 1.0 mg/kg bw/day	<= 0.71
	ConsExpo		Chronic dermal local exposure	<= 0.02 mg/cm2	<= 0.02
	ConsExpo		Dermal: acute, local	<= 0.02 mg/kg bw/day	<= 0.02
	Extended TRA		Oral exposure	0 mg/cm2	< 0.01

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

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

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#### ES 29: Polishes and wax blends (AISE)

#### 1. Scenario description

Main User Groups : SU 21: Consumer uses: Private households (= general public

= consumers)

Chemical product category : **PC31:** Polishes and wax blends

Environmental Release Categories : ERC8a: Wide dispersive indoor use of processing aids in

open systems

Further information : AISE = International Association for Soaps, Detergents and

Maintenance Products

## 2.1 Contributing scenario controlling environmental exposure for: ERC8a

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Frequency and duration of use

Continuous exposure : 365 days/year

Environment factors not influenced by risk management

Flow rate : 18,000 m3/d

## Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 100 % Emission or Release Factor: Water : 100 % Emission or Release Factor: Soil : 0.0 %

Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

plant effluent

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: 2,000 m3/d

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

Conditions and measures related to external treatment of waste for disposal

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

## 2.2 Contributing scenario controlling consumer exposure for: PC31

#### **Product characteristics**

Concentration of the Substance in Mixture/Article

: Covers the percentage of the substance in the product up to

0.1%., Manual spray application - indoor

Concentration of the Substance in

Physical Form (at time of use)

: Covers the percentage of the substance in the product up to

Mixture/Article

5%., other usesLiquid mixture, Solid mixture

Amount used

Amount per event : 135 g

Remarks : Manual spray application (liquid products)

Amount per event : 550 g
Remarks : other uses

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according to Regulation (EC) No. 1907/2006



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Frequency and duration of use

Duration of the acitivity : 4 h

# 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC8a	EUSES		Fresh water		0.0005 mg/l	0.02
			Fresh water sedi- ment		0.005 mg/kg dry weight	0.02
			Marine water		0.00005 mg/l	0.02
			Marine sediment		0.0005 mg/kg dry weight	0.02
			Sewage treatment plant		0.003 mg/l	< 0.01
			Soil		0.0005 mg/kg dry weight	0.02

#### **Consumers**

Contributing Sce- nario	Exposure Assessment Method	Specific con- ditions	Value	Level of Expo- sure	RCR
PC31	ConsExpo, AISE REACT	Consumers	Inhalation: long- term, systemic	<= 0.24 mg/m <sup>3</sup>	<= 0.33
	ConsExpo		Dermal: long-term, systemic	<= 0.15 mg/kg bw/day	<= 0.11
	ConsExpo		Chronic dermal local exposure	<= 0.006 mg/cm2	< 0.01
	ConsExpo		Dermal: acute, local	<= 0.006 mg/cm2	< 0.01
	Extended TRA		Oral exposure	0 mg/kg bw/day	< 0.01

For complete exposure estimation, the values for different routes of exposure and activities may have to be summed up.

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

according to Regulation (EC) No. 1907/2006



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#### ES 30: Consumer use of cosmetics

## 1. Scenario description

Main User Groups : SU 21: Consumer uses: Private households (= general public

= consumers)

Chemical product category : **PC39:** Cosmetics, personal care products

Environmental Release Categories : ERC8a: Wide dispersive indoor use of processing aids in

open systems

#### 2.1 Contributing scenario controlling environmental exposure for: ERC8a

**Product characteristics** 

Viscosity, dynamic : 7.28 mPa.s (at 20 °C)

Frequency and duration of use

Continuous exposure : 365 days/year

Environment factors not influenced by risk management

Flow rate : 18,000 m3/d

#### Other given operational conditions affecting environmental exposure

Emission or Release Factor: Air : 100 % Emission or Release Factor: Water : 100 % Emission or Release Factor: Soil : 0.0 %

## Conditions and measures related to municipal sewage treatment plant

Type of Sewage Treatment Plant : Municipal sewage treatment plant

Flow rate of sewage treatment

plant effluent

: 2,000 m3/d

Effectiveness (of a measure) : 87.7 %

Sludge Treatment : Can be applied on agricultural soil, when in compliance with

local regulations.

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

Disposal methods : Dispose of as hazardous waste in compliance with local and

national regulations.

## 2.2 Contributing scenario controlling consumer exposure for: PC39

**Product characteristics** 

Physical Form (at time of use) : Liquid mixture, Solid mixture

#### 3. Exposure estimation and reference to its source

#### **Environment**

Contributing Scenario	Exposure Assess- ment Meth- od	Specific conditions	Compartment	Value	Level of Exposure (PEC)	RCR
ERC8a	EUSES		Fresh water		0.0005 mg/l	0.02
			Fresh water sedi-		0.005 mg/kg dry	0.02
			ment		weight	

according to Regulation (EC) No. 1907/2006



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	Marine water	0.00005 mg/l	0.02	
	Marine sediment	0.0005 mg/kg dry weight	0.02	
	Sewage treatment plant	0.003 mg/l	< 0.01	
	Soil	0.0005 mg/kg dry weight	0.02	

Risk to consumers' health does not need to be assessed as this is already covered by the Cosmetic Directive 76/768/EEC.

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

according to Regulation (EC) No. 1907/2006



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