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Safety data sheet

BASF safety data sheet. This is a translation of the country-specific safety data sheet into a language other than that required by law. This document does not replace the safety data sheet provided according to Regulation (EC) No 1907/2006.
Date / Revised: 07.09.2023 Version: 3.1
Date previous version: 13.09.2022 Previous version: 3.0
Date / First version: 22.01.2014
Product: **Hydroxycitronellal**

(ID no. 30035054/SDS_GEN_DE/EN)
Date of print 09.10.2025

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

1.1. Product identifier

Hydroxycitronellal

Chemical name: 7-Hydroxycitronellal
CAS Number: 107-75-5

REACH registration number: 01-2119973482-31-0000

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

Relevant identified uses: Chemical, Chemical for detergents, Cosmetic and oral care chemical, flavoring substance

For the detailed identified uses of the product see appendix of the safety data sheet.

1.3. Details of the supplier of the safety data sheet

Company:
BASF SE
67056 Ludwigshafen
GERMANY
Operating Division Nutrition and Health

Telephone: +49 621 60-48434
E-mail address: EN-global-safety-data@basf.com

1.4. Emergency telephone number

International emergency number:
Telephone: +49 180 2273-112

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture

According to Regulation (EC) No 1272/2008 [CLP]

Eye Dam./Irrit. 2	H319 Causes serious eye irritation.
Skin Sens. 1B	H317 May cause an allergic skin reaction.

For the classifications not written out in full in this section the full text can be found in section 16.

2.2. Label elements

According to Regulation (EC) No 1272/2008 [CLP]

Pictogram:

Signal Word:

Warning

Hazard Statement:

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

Precautionary Statements (Prevention):

P280	Wear protective gloves and eye protection or face protection.
P261	Avoid breathing mist or vapour or spray.

Precautionary Statements (Response):

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P333 + P313	If skin irritation or rash occurs: Get medical attention.

Precautionary Statements (Disposal):

P501	Dispose of contents and container to hazardous or special waste collection point.

2.3. Other hazards

According to Regulation (EC) No 1272/2008 [CLP]

When finely distributed on porose material, self-ignition is possible.
The product does not contain a substance fulfilling the PBT (persistent/bioaccumulative/toxic) criteria or the vPvB (very persistent/very bioaccumulative) criteria. Product does not contain a substance above legal limits included in the list established in accordance with Article 59(1) of Regulation (EC) No 1907/2006 for having endocrine disrupting properties or is identified to have endocrine disrupting properties in accordance with the criteria set out in Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605.

SECTION 3: Composition/Information on Ingredients

3.1. Substances

Chemical nature

7-Hydroxycitronellal

	Eye Dam./Irrit. 2
CAS Number: 107-75-5	Skin Sens. 1B
EC-Number: 203-518-7	H319, H317

For the classifications not written out in full in this section, including the hazard classes and the hazard statements, the full text is listed in section 16.

3.2. Mixtures

Not applicable

SECTION 4: First-Aid Measures

4.1. Description of first aid measures

Remove contaminated clothing.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:
Wash thoroughly with soap and water

On contact with eyes:
Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Immediately rinse mouth and then drink 200-300 ml of water, seek medical attention.

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

Symptoms: Information, i.e. additional information on symptoms and effects may be included in the GHS labeling phrases available in Section 2 and in the Toxicological assessments available in Section 11., (Further) symptoms and / or effects are not known so far

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

Treatment: Treat according to symptoms (decontamination, vital functions), no known specific antidote.

SECTION 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media:
carbon dioxide, dry powder, foam

5.2. Special hazards arising from the substance or mixture

Endangering substances: carbon oxides, harmful vapours
Advice: The substances/groups of substances mentioned can be released in case of fire.

5.3. Advice for fire-fighters

Special protective equipment:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.
Cool endangered containers with water-spray.

SECTION 6: Accidental Release Measures

When finely distributed on porose material, self-ignition is possible. Soiled textiles/cleaning rags made of natural fibres (e.g. of pure wool or of pure cotton) are capable of ignition and should not be used and/or must be desposed of in a safe manner.

6.1. Personal precautions, protective equipment and emergency procedures

Use personal protective clothing. Information regarding personal protective measures, see section 8.
Ensure adequate ventilation. Do not breathe vapour/spray. Avoid contact with the skin, eyes and clothing.

6.2. Environmental precautions

Do not discharge into drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up

For small amounts: Pick up with suitable absorbent material. Do not use saw-dust or other combustible substances as an absorbant during cleanup.
For large amounts: Dike spillage. Pump off product.

Dispose of absorbed material in accordance with regulations. Mop up spills with non-flammable adsorbents (e.g. vermiculite, spill mats). Soiled textiles / cleaning rags / adsorbents and Silica are capable of self ignition and should be wetted with water and must be disposed of in a safe manner.

6.4. Reference to other sections

Information regarding exposure controls/personal protection and disposal considerations can be found in section 8 and 13.

SECTION 7: Handling and Storage

7.1. Precautions for safe handling

Ensure thorough ventilation of stores and work areas. Wear suitable protective clothing and eye/face protection. Avoid contact with the skin, eyes and clothing. Keep container tightly sealed.

Protection against fire and explosion:
Risk of self-ignition when a large surface area is produced due to fine dispersion. Soiled textiles / cleaning rags / adsorbents and Silica are capable of self ignition and should be wetted with water and must be disposed of in a safe manner. Avoid all sources of ignition: heat, sparks, open flame. Take precautionary measures against static discharges.

7.2. Conditions for safe storage, including any incompatibilities

Segregate from oxidants.
Further information on storage conditions: Keep container tightly closed in a cool, well-ventilated place. Protect from the effects of light.

Storage class according to TRGS 510 (originally VCI, Germany): (10) Combustible liquids

7.3. Specific end use(s)

See exposure scenario(s) in the attachment to this safety data sheet.

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Components with occupational exposure limits

No substance specific occupational exposure limits known.

PNEC

freshwater: 0,0316 mg/l

marine water: 0,00316 mg/l

intermittent release: 0,316 mg/l

STP: 10 mg/l

sediment (freshwater): 0,145 mg/kg

sediment (marine water): 0,0145 mg/kg

soil: 0,0105 mg/kg

oral (secondary poisoning):
No PNEC oral derived, as accumulation in organisms is not to be expected.

DNEL

worker:
Long-term exposure- systemic effects, Inhalation: 8,7 mg/m3

worker:
Long-term exposure- systemic effects, dermal: 4,9 mg/kg

worker:
Long-term exposure - local effects, dermal: 0,5 mg/cm2

consumer:
Long-term exposure- systemic effects, Inhalation: 2,1 mg/m3

consumer:
Long-term exposure- systemic effects, dermal: 2,5 mg/kg

consumer:
Long-term exposure - local effects, dermal: 0,5 mg/cm2

consumer:
Long-term exposure- systemic effects, oral: 1,2 mg/kg

8.2. Exposure controls

Personal protective equipment

Respiratory protection:
Respiratory protection in case of vapour/aerosol release. Particle filter with medium efficiency for solid and liquid particles (e.g. EN 143 or 149, Type P2 or FFP2)

Consider the risk management measures as outlined in the exposure scenario.

Hand protection:
Suitable chemical resistant safety gloves (EN ISO 374-1) also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1): E.g. nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), butyl rubber (0.7 mm) etc.
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing. Manufacturer's directions for use should be observed because of great diversity of types.

Consider the risk management measures as outlined in the exposure scenario.

Eye protection:
Safety glasses with side-shields (frame goggles) (e.g. EN 166)

Consider the risk management measures as outlined in the exposure scenario.

Body protection:
Body protection must be chosen based on level of activity and exposure.

Consider the risk management measures as outlined in the exposure scenario.

General safety and hygiene measures

Avoid contact with the skin, eyes and clothing. Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment. No eating, drinking, smoking or tobacco use at the place of work. Hands and/or face should be washed before breaks and at the end of the shift. Store work clothing separately.

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

State of matter:	liquid	
Form:	liquid	
Colour:	colourless, clear	
Odour:	flowery	
Odour threshold:	< 100 ppm	
Melting point:	< -100 °C	(OECD Guideline 102)
Boiling point:	240,49 °C (1.013,25 hPa) The substance / product decomposes.	(measured)

decomposition point:	> 140 °C (1.013,25 hPa) The substance / product decomposes.	(measured)
Flammability:	hardly combustible	(derived from flash point)
Lower explosion limit:	For liquids not relevant for classification and labelling., The lower explosion point may be 5 - 15 °C below the flash point.	
Upper explosion limit:	For liquids not relevant for classification and labelling.	
Flash point:	113 °C Literature data.	
Auto-ignition temperature:	210 °C	(DIN 51794)
Thermal decomposition:	30 - 400 °C (DSC (DIN 51007)) No exothermic decomposition within the mentioned temperature range.	
pH value:	approx. 7	
Viscosity, kinematic:	34,6 mm2/s (20 °C)	(OECD 114)
	12,1 mm2/s (40 °C)	(OECD 114)
Viscosity, dynamic:	31,9 mPa.s (20 °C) The value was determined by calculation from the detected kinematic viscosity.	(OECD 114)
	11,0 mPa.s (40 °C) The value was determined by calculation from the detected kinematic viscosity.	(OECD 114)
Solubility in water:	35 g/l (20 °C, pH 3,4)	(OECD Guideline 105)
Solubility (qualitative) solvent(s):	organic solvents soluble	
Partitioning coefficient n-octanol/water (log Kow):	1,68 (25 °C)	(measured)
Vapour pressure:	0,005472 hPa (20 °C) Extrapolated value	(measured)
Relative density:	0,9209 (20 °C)	(pyknometer)
Density:	0,9209 g/cm3 (20 °C)	(pyknometer)

Relative vapour density (air): 5,94 (calculated)
(20 °C)
Heavier than air.

Particle characteristics

Particle size distribution: The substance / product is marketed or used in a non solid or granular form. -

9.2. Other information

Information with regard to physical hazard classes

Explosives

Explosion hazard: Based on the chemical structure there is no indication of explosive properties.

Impact sensitivity:
Based on the chemical structure there is no shock-sensitivity.

Oxidizing properties

Fire promoting properties: Based on its structural properties the product is not classified as oxidizing.

Pyrophoric properties

Self-ignition temperature: Test type: Spontaneous self-ignition at room-temperature.

Based on its structural properties the product is not classified as self-igniting.

Self-heating substances and mixtures

Self heating ability: It is not a substance capable of spontaneous heating.

Substances and mixtures, which emit flammable gases in contact with water

Formation of flammable gases:
Forms no flammable gases in the presence of water.

Corrosion to metals

No corrosive effect on metal.

Other safety characteristics

pKA:
Study scientifically not justified., The substance does not dissociate.

Adsorption/water - soil: KOC: 10; log KOC: 1,0 (calculated)

Surface tension:
Based on chemical structure, surface activity is not to be expected.

Molar mass:	172,27 g/mol
SAPT-Temperature:	Study scientifically not justified.
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.

SECTION 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Corrosion to metals:	No corrosive effect on metal.	
Formation of flammable gases:	Remarks:	Forms no flammable gases in the presence of water.

10.2. Chemical stability

The product is stable if stored and handled as prescribed/indicated.

10.3. Possibility of hazardous reactions

Self-ignition is possible when finely distributed on flammable surfaces in the presence of air.

10.4. Conditions to avoid

Avoid contact with air. Avoid all sources of ignition: heat, sparks, open flame. See SDS section 7 - Handling and storage.

10.5. Incompatible materials

Substances to avoid:
strong oxidizing agents, acids, bases

10.6. Hazardous decomposition products

Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

SECTION 11: Toxicological Information

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

Acute toxicity

Assessment of acute toxicity:

Virtually nontoxic after a single ingestion. Virtually nontoxic after a single skin contact.

Experimental/calculated data:

LD50 rat (oral): > 6.400 mg/kg (similar to OECD guideline 401)
LD50 rabbit (dermal): > 2.000 mg/kg
No mortality was observed.

Irritation

Assessment of irritating effects:

Not irritating to the skin. Eye contact causes irritation.

Experimental/calculated data:

Skin corrosion/irritation

rabbit: non-irritant (Directive 84/449/EEC, B.4)

Serious eye damage/irritation

rabbit: Irritant. (BASF-Test)

Respiratory/Skin sensitization

Assessment of sensitization:

May cause sensitization by skin contact.

Experimental/calculated data:

mouse: skin sensitizing (similar to OECD guideline 429)
Literature data.

Germ cell mutagenicity

Assessment of mutagenicity:

The substance was not mutagenic in bacteria. The substance was mutagenic in a mammalian cell culture test system. As the significance of these findings for human health is not clear at this time, further tests are being initiated.

Carcinogenicity

Assessment of carcinogenicity:
No data available.

Reproductive toxicity

Assessment of reproduction toxicity:
In high doses a potential to impair fertility cannot be fully excluded. The results were determined in a Screening test (OECD 421/422). As the significance of these findings for human health is not clear at this time, further tests are being initiated.

Developmental toxicity

Assessment of teratogenicity:

The potential to cause toxicity to development cannot be excluded when given in high doses. The results were determined in a Screening test (OECD 421/422). An investigation of a developmental toxic effect is currently in progress.

Specific target organ toxicity (single exposure)

Assessment of STOT single:
Based on available data, the classification criteria are not met.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:

Based on available data, the classification criteria are not met. The results were determined in a Screening test.

Aspiration hazard

No aspiration hazard expected.

Interactive effects

No data available.

11.2. Information on other hazards

Endocrine disrupting properties

The substance is not identified to have endocrine disrupting properties according to Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 nor is included in the Candidate List of substances of very high concern according to EU REACh Article 59 for having endocrine disrupting properties.

SECTION 12: Ecological Information

12.1. Toxicity

Assessment of aquatic toxicity:
Acutely harmful for aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:
LC50 (96 h) 31,6 mg/l, Leuciscus idus (DIN 38412 Part 15, static)
The details of the toxic effect relate to the nominal concentration.

Aquatic invertebrates:

LC50 (48 h) 410 mg/l, Daphnia magna (Directive 79/831/EEC, static)
The details of the toxic effect relate to the nominal concentration.

Aquatic plants:
EC50 (72 h) 123,32 mg/l, Scenedesmus subspicatus (DIN 38412 Part 9, static)
The details of the toxic effect relate to the nominal concentration.

Microorganisms/Effect on activated sludge:
EC10 (17 h) 625 mg/l, Pseudomonas putida (DIN 38412 Part 8, aerobic)
The details of the toxic effect relate to the nominal concentration.

EC20 (30 min) > 1.000 mg/l, activated sludge (DIN EN ISO 8192-OECD 209-88/302/EEC,P. C, aerobic)

Chronic toxicity to fish:
No data available.

Chronic toxicity to aquatic invertebrates:
No data available.

Assessment of terrestrial toxicity:
No data available concerning terrestrial toxicity.

12.2. Persistence and degradability

Assessment biodegradation and elimination (H2O):
Readily biodegradable (according to OECD criteria).

Elimination information:
80 - 90 % BOD of the ThOD (28 d) (OECD Guideline 301 F) (aerobic, activated sludge)

Assessment of stability in water:
Substance is readily biodegradable, therefore hydrolysis is not expected to be relevant.

12.3. Bioaccumulative potential

Assessment bioaccumulation potential:
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

12.4. Mobility in soil

Assessment transport between environmental compartments:
Volatility: The substance will not evaporate into the atmosphere from the water surface.
Adsorption in soil: Adsorption to solid soil phase is not expected.

12.5. Results of PBT and vPvB assessment

According to Annex XIII of Regulation (EC) No.1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH): The product does not fulfill the criteria for PBT (Persistent/bioaccumulative/toxic) and vPvB (very persistent/very bioaccumulative). Self classification

12.6. Endocrine disrupting properties

The substance is not identified to have endocrine disrupting properties according to Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 nor is included in the Candidate List of substances of very high concern according to EU REACh Article 59 for having endocrine disrupting properties.

12.7. Other adverse effects

The substance is not listed in Regulation (EC) 1005/2009 on substances that deplete the ozone layer.

SECTION 13: Disposal Considerations

13.1. Waste treatment methods

Observe national and local legal requirements.

SECTION 14: Transport Information

Land transport

ADR

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

RID

	Not classified as a dangerous good under transport regulations
UN number or ID number:	Not applicable

UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Inland waterway transport

ADN

Not classified as a dangerous good under transport regulations

UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user:	None known

Transport in inland waterway vessel

Not evaluated

Sea transport

IMDG

Not classified as a dangerous good under transport regulations

UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable
Special precautions for user	None known

Air transport

IATA/ICAO

Not classified as a dangerous good under transport regulations

UN number or ID number:	Not applicable
UN proper shipping name:	Not applicable
Transport hazard class(es):	Not applicable
Packing group:	Not applicable
Environmental hazards:	Not applicable

Special precautions for user	None known

14.1. UN number or ID number
See corresponding entries for “UN number or ID number” for the respective regulations in the tables above.

14.2. UN proper shipping name
See corresponding entries for “UN proper shipping name” for the respective regulations in the tables above.

14.3. Transport hazard class(es)
See corresponding entries for “Transport hazard class(es)” for the respective regulations in the tables above.

14.4. Packing group
See corresponding entries for “Packing group” for the respective regulations in the tables above.

14.5. Environmental hazards
See corresponding entries for “Environmental hazards” for the respective regulations in the tables above.

14.6. Special precautions for user
See corresponding entries for “Special precautions for user” for the respective regulations in the tables above.

14.7. Maritime transport in bulk according to IMO instruments
Maritime transport in bulk is not intended.

SECTION 15: Regulatory Information

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

Prohibitions, Restrictions and Authorizations

Annex XVII of Regulation (EC) No 1907/2006: Number on List: 3

Hazardous Incident Ordinance (Germany):
Listed in above regulation: no

Directive 2012/18/EU - Control of Major Accident Hazards involving dangerous substances (EU):
Listed in above regulation: no

Classification according to 'TA-Luft' (Germany):

5.2.5: Organic gases, general guidance

Water hazard class (§6 AwSV para.4 (Legal binding announcement of the substance in the Federal Gazette)): (1) Weakly water polluting. ID-No.: 2856

TRGS 401 "Risks resulting from skin contact - identification, assessment, measures"
Law on the Protection of Working Youth

15.2. Chemical Safety Assessment

Chemical Safety Assessment performed

SECTION 16: Other Information

Assessment of the hazard classes according to UN GHS criteria (most recent version)

Eye Dam./Irrit. 2A
Aquatic Acute 3
Skin Sens. 1B

Any other intended applications should be discussed with the manufacturer. Corresponding occupational protection measurements must be followed.

Full text of the classifications, including the hazard classes and the hazard statements, if mentioned in section 2 or 3:

Eye Dam./Irrit.	Serious eye damage/eye irritation
Skin Sens.	Skin sensitization
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.

Abbreviations
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road. ADN = The European Agreement concerning the International Carriage of Dangerous Goods by Inland waterways. ATE = Acute Toxicity Estimates. CAO = Cargo Aircraft Only. CAS = Chemical Abstract Service. CLP = Classification, Labelling and Packaging of substances and mixtures. DIN = German national organization for standardization. DNEL = Derived No Effect Level. EC50 = Effective concentration median for 50% of the population. EC = European Community. EN = European Standards. IARC = International Agency for Research on Cancer. IATA = International Air Transport Association. IBC-Code = Intermediate Bulk Container code. IMDG = International Maritime Dangerous Goods Code. ISO = International Organization for Standardization. STEL = Short-Term Exposure Limit. LC50 = Lethal concentration median for 50% of the population. LD50 = Lethal dose median for 50% of the population. TLV = Threshold Limit Value. MARPOL = The International Convention for the Prevention of Pollution from Ships. NEN = Dutch Norm. NOEC = No Observed Effect Concentration. OEL = Occupational Exposure Limit. OECD = Organization for Economic Cooperation and Development. PBT = Persistent, Bioaccumulative and Toxic. PNEC = Predicted No Effect Level. PPM = Parts per million. RID = The European Agreement concerning the International Carriage of Dangerous Goods by Rail. TWA = Time

Weight Average. UN-number = UN number at transport. vPvB = very Persistent and very Bioaccumulative.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. This safety data sheet is neither a Certificate of Analysis (CoA) nor technical data sheet and shall not be mistaken for a specification agreement. Identified uses in this safety data sheet do neither represent an agreement on the corresponding contractual quality of the substance/mixture nor a contractually designated use. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.

Annex: Exposure Scenarios

Index

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1. Short title of exposure scenario

Compounding, (use in industrial settings)
ERC2; PROC1, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC15

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC2: Formulation into mixture
Operational conditions	
Annual amount used in the EU	380.000 kg
Minimum emission days per year	250
Emission factor air	2,5 %
Emission factor water	0,2 %
Emission factor soil	0 %

Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10
Dilution factor coast	100
Risk Management Measures	
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,588132
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	2.584,5 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario	
Use descriptors covered	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. Use domain: industrial
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	60 min 5 days per week
Indoor/Outdoor	Indoor
	Assumes activities are at ambient temperature.
Risk Management Measures	
Wear chemically resistant gloves in combination with ‘basic’ employee training.	Effectiveness: 90 %
Avoid splashing. Avoid frequent and direct contact with substance. Ensure minimization of manual phases	
Use suitable chemically resistant gloves.	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic

Exposure estimate	0,0034 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,0007
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - local
Exposure estimate	0,001 mg/cm²/day
Risk Characterization Ratio (RCR)	0,002
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,0144 mg/m³
Risk Characterization Ratio (RCR)	0,00165
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: industrial
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	240 min 5 days per week
Indoor/Outdoor	Indoor
	Assumes activities are at ambient temperature.
Risk Management Measures	
Provide a good standard of general or controlled ventilation (5 to 10 air changes per hour)	Effectiveness: 70 %
Wear chemically resistant gloves in combination with ‘basic’ employee training.	Effectiveness: 90 %
Avoid splashing. Avoid frequent and direct contact with substance. Ensure minimization of manual phases	
Use suitable chemically resistant gloves.	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,0686 mg/kg bw/day

Risk Characterization Ratio (RCR)	0,013994
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - local
Exposure estimate	0,02 mg/cm²/day
Risk Characterization Ratio (RCR)	0,04
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,876 mg/m³
Risk Characterization Ratio (RCR)	0,445512
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: industrial
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	240 min 5 days per week
Indoor/Outdoor	Indoor
	Assumes activities are at ambient temperature.
Risk Management Measures	
Local exhaust ventilation	Effectiveness: 90 %
Wear chemically resistant gloves in combination with ‘basic’ employee training.	Effectiveness: 90 %
Avoid splashing. Avoid frequent and direct contact with substance. Ensure minimization of manual phases	
Use suitable chemically resistant gloves.	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,279883
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - local
Exposure estimate	0,2 mg/cm²/day
Risk Characterization Ratio (RCR)	0,4
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker

	Worker - inhalation, long-term - systemic
Exposure estimate	2,1533 mg/m³
Risk Characterization Ratio (RCR)	0,247507
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 25 %
Physical state	liquid
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	240 min 5 days per week
Indoor/Outdoor	Indoor
	Assumes activities are at ambient temperature.
Risk Management Measures	
Provide a good standard of general or controlled ventilation (5 to 10 air changes per hour)	Effectiveness: 70 %
Wear chemically resistant gloves in combination with ‘basic’ employee training.	Effectiveness: 90 %
Avoid splashing. Avoid frequent and direct contact with substance. Ensure minimization of manual phases	
Use suitable chemically resistant gloves.	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - systemic
Exposure estimate	0,3429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,069971
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - local
Exposure estimate	0,025 mg/cm²/day
Risk Characterization Ratio (RCR)	0,05

Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	3,23 mg/m³
Risk Characterization Ratio (RCR)	0,37126
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates)	

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	60 min 5 days per week
Indoor/Outdoor	Indoor
	Assumes activities are at ambient temperature.
Risk Management Measures	
Provide a good standard of general or controlled ventilation (5 to 10 air changes per hour)	Effectiveness: 70 %
Wear chemically resistant gloves in combination with ‘basic’ employee training.	Effectiveness: 90 %
Avoid splashing. Avoid frequent and direct contact with substance. Ensure minimization of manual phases	
Use suitable chemically resistant gloves.	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,279883
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - local
Exposure estimate	0,1 mg/cm²/day
Risk Characterization Ratio (RCR)	0,2

Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	2,1533 mg/m³
Risk Characterization Ratio (RCR)	0,247507
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use domain: industrial
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 25 %
Physical state	liquid
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	60 min 5 days per week
Indoor/Outdoor	Indoor
	Assumes activities are at ambient temperature.
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %
Avoid splashing. Avoid frequent and direct contact with substance. Ensure minimization of manual phases	
Use suitable chemically resistant gloves.	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - systemic
Exposure estimate	0,1714 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,034985
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - local
Exposure estimate	0,025 mg/cm²/day
Risk Characterization Ratio (RCR)	0,05
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been

	considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	1,7944 mg/m³
Risk Characterization Ratio (RCR)	0,206256
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates)	

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: industrial
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	15 min 5 days per week
Indoor/Outdoor	Indoor
	Assumes activities are at ambient temperature.
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %
Avoid splashing. Avoid frequent and direct contact with substance. Ensure minimization of manual phases	
Use suitable chemically resistant gloves.	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,0343 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,006997
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - local
Exposure estimate	0,01 mg/cm²/day
Risk Characterization Ratio (RCR)	0,02
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,5888 mg/m³
Risk Characterization Ratio (RCR)	0,412511
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

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2. Short title of exposure scenario

Formulation, (use in industrial settings)
ERC2; PROC1, PROC3, PROC5, PROC8a, PROC8b, PROC9, PROC14, PROC15

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	AISE SPERC 2.1.a.v2: AISE SPERC 2.1.a.v2
Operational conditions	
Annual amount used in the EU	171.000 kg
Minimum emission days per year	250
Emission factor air	0 %
Emission factor water	0,01 %
Emission factor soil	0 %
Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10
Dilution factor coast	100
Risk Management Measures	
Wastewater treatment measures considered suitable are, e.g.	Precipitation, Coagulation, Must be eliminated from water by chemical flocculation.
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,094722
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	7.221,1 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario	
Use descriptors covered	AISE SPERC 2.1.b.v2: AISE SPERC 2.1.b.v2

Operational conditions	
Annual amount used in the EU	70.000 kg
Minimum emission days per year	250
Emission factor air	0 %
Emission factor water	0,1 %
Emission factor soil	0 %
Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10
Dilution factor coast	100
Risk Management Measures	
Wastewater treatment measures considered suitable are, e.g.	Precipitation, Coagulation, Must be eliminated from water by chemical flocculation.
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,119439
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	2.344,3 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario	
Use descriptors covered	AISE SPERC 2.1.c.v2: AISE SPERC 2.1.c.v2
Operational conditions	
Annual amount used in the EU	55.000 kg
Minimum emission days per year	250
Emission factor air	0 %
Emission factor water	0,2 %
Emission factor soil	0 %
Receive Surf. Water (Flow Rate).	18.000 m3/d

Dilution factor river	10
Dilution factor coast	100
Risk Management Measures	
Wastewater treatment measures considered suitable are, e.g.	Precipitation, Coagulation, Must be eliminated from water by chemical flocculation.
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,138128
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	1.592,7 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario	
Use descriptors covered	AISE SPERC 2.1.j.v2: AISE SPERC 2.1.j.v2
Operational conditions	
Annual amount used in the EU	50.000 kg
Minimum emission days per year	250
Emission factor air	0 %
Emission factor water	0,1 %
Emission factor soil	0 %
Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10
Dilution factor coast	100
Risk Management Measures	
Wastewater treatment measures considered suitable are, e.g.	Nanofiltration (NR), Ultrafiltration (UF) or Reverse Osmosis (OR), Coagulation, Must be eliminated from water by chemical flocculation.
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	

Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,110094
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	1.816,6 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario		
Use descriptors covered	AISE SPERC 2.1.k.v2: AISE SPERC 2.1.k.v2	
Operational conditions		
Annual amount used in the EU	28.000 kg	
Minimum emission days per year	250	
Emission factor air	0 %	
Emission factor water	0,2 %	
Emission factor soil	0 %	
Receive Surf. Water (Flow Rate).	18.000 m3/d	
Dilution factor river	10	
Dilution factor coast	100	
Risk Management Measures		
Wastewater treatment measures considered suitable are, e.g.		Nanofiltration (NR), Ultrafiltration (UF) or Reverse Osmosis (OR), Coagulation, Must be eliminated from water by chemical flocculation.
Type of STP		Municipal STP
Assumed sewage treatment plant flow (m3/d)		2.000 m3/d
Exposure estimate and reference to its source		
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,112897	
	Risk from environmental exposure is driven by soil.	
Maximum amount of safe use	992,1 kg/d	
Risk from environmental exposure is driven by soil.		

Contributing exposure scenario	
Use descriptors covered	AISE SPERC 2.1.l.v2: AISE SPERC 2.1.l.v2

Operational conditions	
Annual amount used in the EU	28.000 kg
Minimum emission days per year	250
Emission factor air	0 %
Emission factor water	0,4 %
Emission factor soil	0 %
Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10
Dilution factor coast	100

Risk Management Measures	
Wastewater treatment measures considered suitable are, e.g.	Nanofiltration (NR), Ultrafiltration (UF) or Reverse Osmosis (OR), Coagulation, Must be eliminated from water by chemical flocculation.
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d

Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,139063
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	805,4 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario	
Use descriptors covered	ERC2: Formulation into mixture
Operational conditions	
Annual amount used in the EU	80.000 kg
Minimum emission days per year	250
Emission factor air	0 %
Emission factor water	0 %
Emission factor soil	0,01 %

Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10
Dilution factor coast	100
Risk Management Measures	
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,086732
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	3.689,5 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario	
Use descriptors covered	ERC2: Formulation into mixture
Operational conditions	
Annual amount used in the EU	10.000 kg
Minimum emission days per year	250
Emission factor air	0 %
Emission factor water	2 %
Emission factor soil	0 %
Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10
Dilution factor coast	100
Risk Management Measures	
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,180179
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	222 kg/d

Risk from environmental exposure is driven by soil.

Contributing exposure scenario	
Use descriptors covered	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. Use domain: industrial
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 25 %
Physical state	liquid
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	60 min 5 days per week
Indoor/Outdoor	Indoor
	Assumes activities are at ambient temperature.
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %
Avoid splashing. Avoid frequent and direct contact with substance. Ensure minimization of manual phases	
Use suitable chemically resistant gloves.	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - systemic
Exposure estimate	0,0009 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000175
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - local
Exposure estimate	0,0003 mg/cm²/day
Risk Characterization Ratio (RCR)	0,0005
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	0,0036 mg/m³
Risk Characterization Ratio (RCR)	0,000413

Guidance to Downstream Users
For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates)

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition Use domain: industrial
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 25 %
Physical state	liquid
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	240 min 5 days per week
Indoor/Outdoor	Indoor
	Assumes activities are at ambient temperature.
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %
Avoid splashing. Avoid frequent and direct contact with substance. Ensure minimization of manual phases	
Use suitable chemically resistant gloves.	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - systemic
Exposure estimate	0,0171 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,003499
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - local
Exposure estimate	0,005 mg/cm²/day
Risk Characterization Ratio (RCR)	0,01
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.

	Worker - inhalation, long-term - systemic
Exposure estimate	3,23 mg/m³
Risk Characterization Ratio (RCR)	0,37126
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates)	

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: industrial
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 25 %
Physical state	liquid
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	240 min 5 days per week
Indoor/Outdoor	Indoor
	Assumes activities are at ambient temperature.
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %
Avoid splashing. Avoid frequent and direct contact with substance. Ensure minimization of manual phases	
Use suitable chemically resistant gloves.	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - systemic
Exposure estimate	0,3429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,069971
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - local
Exposure estimate	0,05 mg/cm²/day
Risk Characterization Ratio (RCR)	0,1
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.

	Worker - inhalation, long-term - systemic
Exposure estimate	5,3833 mg/m³
Risk Characterization Ratio (RCR)	0,618767
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates)	

Contributing exposure scenario	
Use descriptors covered	PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities Use domain: industrial
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 25 %
Physical state	liquid
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	60 min 5 days per week
Indoor/Outdoor	Indoor
	Assumes activities are at ambient temperature.
Risk Management Measures	
Wear chemically resistant gloves in combination with ‘basic’ employee training.	Effectiveness: 90 %
Avoid splashing. Avoid frequent and direct contact with substance. Ensure minimization of manual phases	
Use suitable chemically resistant gloves.	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.

	Worker - dermal, long-term - systemic
Exposure estimate	0,3429 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,069971
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - local
Exposure estimate	0,025 mg/cm²/day
Risk Characterization Ratio (RCR)	0,05
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	1,7944 mg/m³
Risk Characterization Ratio (RCR)	0,206256
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates)	

Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.

Contributing exposure scenario	
Use descriptors covered	PROC14: Tabletting, compression, extrusion, pelletisation, granulation In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: industrial
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 25 %

Physical state	liquid
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	15 min 5 days per week
Indoor/Outdoor	Indoor
	Assumes activities are at ambient temperature.
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %
Avoid splashing. Avoid frequent and direct contact with substance. Ensure minimization of manual phases	
Use suitable chemically resistant gloves.	
Use suitable eye protection.	
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - systemic
Exposure estimate	0,0086 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,001749
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - local
Exposure estimate	0,0025 mg/cm²/day
Risk Characterization Ratio (RCR)	0,005
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	0,8972 mg/m³
Risk Characterization Ratio (RCR)	0,103128
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see exposure estimates)	

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3. Short title of exposure scenario

Use in polishes, wax blends, washing and cleaning products, (use in professional settings)
ERC8a, ERC8d; PROC1, PROC3, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13, PROC19

Control of exposure and risk management measures

Contributing exposure scenario		
Use descriptors covered	ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)	
Operational conditions		
Annual amount used in the EU	380.000 kg	
Minimum emission days per year	365	
Emission factor air	100 %	
Emission factor water	100 %	
Emission factor soil	0 %	
Receive Surf. Water (Flow Rate).	18.000 m3/d	
Dilution factor river	10	
Dilution factor coast	100	
Risk Management Measures		
Type of STP		Municipal STP
Assumed sewage treatment plant flow (m3/d)		2.000 m3/d
Exposure estimate and reference to its source		
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,111054	
	Risk from environmental exposure is driven by soil.	
Maximum amount of safe use	1,9 kg/d	
Risk from environmental exposure is driven by soil.		

Contributing exposure scenario	
Use descriptors covered	ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
Operational conditions	
Annual amount used in the EU	380.000 kg
Minimum emission days per year	365
Emission factor air	100 %
Emission factor water	100 %
Emission factor soil	20 %

Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10
Dilution factor coast	100
Risk Management Measures	
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,111054
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	1,9 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario	
Use descriptors covered	PROC1: Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions. In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.

Contributing exposure scenario	
Use descriptors covered	PROC3: Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk

	characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.

Contributing exposure scenario	
Use descriptors covered	PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.

Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.

Contributing exposure scenario	
Use descriptors covered	PROC10: Roller application or brushing In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.

Contributing exposure scenario	
Use descriptors covered	PROC11: Non industrial spraying In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.

Contributing exposure scenario

Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.

Contributing exposure scenario	
Use descriptors covered	PROC19: Manual activities involving hand contact In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.

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4. Short title of exposure scenario

Use in polishes, wax blends, washing and cleaning products, (consumer use)
ERC8a, ERC8d; PC31, PC35

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
Operational conditions	
Annual amount used in the EU	380.000 kg
Minimum emission days per year	365
Emission factor air	100 %
Emission factor water	100 %
Emission factor soil	0 %
Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10
Dilution factor coast	100

Risk Management Measures	
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,111054
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	1,9 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario	
Use descriptors covered	ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
Operational conditions	
Annual amount used in the EU	380.000 kg
Minimum emission days per year	365
Emission factor air	100 %
Emission factor water	100 %
Emission factor soil	20 %
Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10
Dilution factor coast	100
Risk Management Measures	
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,111054
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	1,9 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario	
Use descriptors covered	PC31: Polishes and Wax Blends. In accordance to Article 14 (2a) of the REACh Regulation

	(EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.
Operational conditions	
Vapour pressure of the substance during use	0,5472 Pa

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products). In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.
Operational conditions	
Vapour pressure of the substance during use	0,5472 Pa

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5. Short title of exposure scenario

Use in/as Air care products, (consumer use)
ERC8a; PC3

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
Operational conditions	
Annual amount used in the EU	380.000 kg
Minimum emission days per year	365
Emission factor air	100 %
Emission factor water	100 %
Emission factor soil	0 %

Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10
Dilution factor coast	100
Risk Management Measures	
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,111054
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	1,9 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario	
Use descriptors covered	PC3: Air care products.
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 4 %
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	Exposure duration: 480 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	150 uses per year
Room size	16 m3
Ventilation rate per hour	1
body weight	65 kg
Spray duration	28800 sec
Risk Management Measures	
Consumer Measures	Ensure spraying away from persons.
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Inhalation model: Exposure to spray/dust
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0136 mg/m³
Risk Characterization Ratio (RCR)	0,006475
	The exposure calculation is based on the mean concentration on the day of exposure.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC3: Air care products. Other products of this category do either not exceed a concentration of 1% for this substance or exposure estimations are covered by the calculations made for this product category. In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.
Operational conditions	
Vapour pressure of the substance during use	0,5472 Pa

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6. Short title of exposure scenario

Use in cosmetics, (consumer use)
ERC8a; PC28, PC39

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)
Operational conditions	
Annual amount used in the EU	380.000 kg
Minimum emission days per year	365
Emission factor air	100 %
Emission factor water	100 %
Emission factor soil	0 %
Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10
Dilution factor coast	100
Risk Management Measures	

Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,111054
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	1,9 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario	
Use descriptors covered	PC28: Perfumes, Fragrances. In accordance to the Article 14 (5b) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation needs not to be performed for end uses in cosmetic products within the scope of Directive EC 1223/2009.
Operational conditions	
Vapour pressure of the substance during use	0,5472 Pa

Contributing exposure scenario	
Use descriptors covered	PC39: Cosmetics, personal care products. In accordance to the Article 14 (5b) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation needs not to be performed for end uses in cosmetic products within the scope of Directive EC 1223/2009.
Operational conditions	
Vapour pressure of the substance during use	0,5472 Pa

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7. Short title of exposure scenario

Use as fragrance in biocidal products, (consumer use)
ERC8a, ERC8d; PC8

Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC8a: Widespread use of non-reactive processing aid (no inclusion into or onto article, indoor)

Operational conditions	
Annual amount used in the EU	380.000 kg
Minimum emission days per year	365
Emission factor air	100 %
Emission factor water	100 %
Emission factor soil	0 %
Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10
Dilution factor coast	100
Risk Management Measures	
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,111054
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	1,9 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario	
Use descriptors covered	ERC8d: Widespread use of non-reactive processing aid (no inclusion into or onto article, outdoor)
Operational conditions	
Annual amount used in the EU	380.000 kg
Minimum emission days per year	365
Emission factor air	100 %
Emission factor water	100 %
Emission factor soil	20 %
Receive Surf. Water (Flow Rate).	18.000 m3/d
Dilution factor river	10

Dilution factor coast	100
Risk Management Measures	
Type of STP	Municipal STP
Assumed sewage treatment plant flow (m3/d)	2.000 m3/d
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,111054
	Risk from environmental exposure is driven by soil.
Maximum amount of safe use	1,9 kg/d
Risk from environmental exposure is driven by soil.	

Contributing exposure scenario	
Use descriptors covered	PC8: Biocidal Products.
	Repellents, insect
	Application adult
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 1,4059 %
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	54 uses per year
Duration and Frequency of activity	Exposure duration: 180 min Relevant for oral exposure estimates
Duration and Frequency of activity	54 uses per year
body weight	65 kg
Uptake fraction dermal	100 % Relevant for dermal exposure estimates
	Relevant for dermal exposure estimates
Uptake fraction oral	100 % Relevant for oral exposure estimates
	Relevant for oral exposure estimates
	Amount per use 6 g Relevant for dermal exposure estimates
Ingestion rate	1,33 mg/min
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic

Exposure estimate	0,192 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,076804
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Oral model: constant rate, Uptake model: Uptake fraction
	Consumer - oral, long-term - systemic
Exposure estimate	0,0077 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,006384
	The calculation is based on the internal chronic dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC8: Biocidal Products.
	Repellents, insect
	Application adult
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 1,4059 %
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	Exposure duration: 180 min Relevant for oral exposure estimates
Duration and Frequency of activity	54 uses per year
body weight	65 kg
Uptake fraction oral	100 % Relevant for oral exposure estimates
	Relevant for oral exposure estimates
	Amount per use 6 g Relevant for dermal exposure estimates
Ingestion rate	1,33 mg/min
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Dermal model: instant application
	Consumer - dermal, short-term - local
Exposure estimate	0,0048 mg/cm²/day
Risk Characterization Ratio (RCR)	0,009641
	The calculation is based on the external dose.
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Oral model: constant rate, Uptake model: Uptake fraction
	Consumer - oral, long-term - systemic
Exposure estimate	0,0077 mg/kg bw/day

Risk Characterization Ratio (RCR)	0,006384
	The calculation is based on the internal chronic dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC8: Biocidal Products.
	Repellents, insect
	application child
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 1,4059 %
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	54 uses per year
Duration and Frequency of activity	Exposure duration: 180 min Relevant for oral exposure estimates
Duration and Frequency of activity	54 uses per year
body weight	8,69 kg
Uptake fraction dermal	100 % Relevant for dermal exposure estimates
	Relevant for dermal exposure estimates
Uptake fraction oral	100 % Relevant for oral exposure estimates
	Relevant for oral exposure estimates
	Amount per use 1,5 g Relevant for dermal exposure estimates
Ingestion rate	0,83 mg/min
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,3591 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,143621
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Oral model: constant rate, Uptake model: Uptake fraction
	Consumer - oral, long-term - systemic
Exposure estimate	0,0358 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,029801
	The calculation is based on the internal chronic dose.

Guidance to Downstream Users
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario	
Use descriptors covered	PC8: Biocidal Products.
	Repellents, insect
	application child
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 1,4059 %
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	Exposure duration: 180 min Relevant for oral exposure estimates
Duration and Frequency of activity	54 uses per year
body weight	8,69 kg
Uptake fraction oral	100 % Relevant for oral exposure estimates
	Relevant for oral exposure estimates
	Amount per use 1,5 g Relevant for dermal exposure estimates
Ingestion rate	0,83 mg/min
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Dermal model: instant application
	Consumer - dermal, short-term - local
Exposure estimate	0,0044 mg/cm²/day
Risk Characterization Ratio (RCR)	0,008788
	The calculation is based on the external dose.
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Oral model: constant rate, Uptake model: Uptake fraction
	Consumer - oral, long-term - systemic
Exposure estimate	0,0358 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,029801
	The calculation is based on the internal chronic dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC8: Biocidal Products.
Operational conditions	

Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 1,4059 %
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	Exposure duration: 240 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	90 uses per year
Room size	58 m3
Ventilation rate per hour	0,5
body weight	65 kg
Uptake fraction dermal	100 % Relevant for dermal exposure estimates
	Relevant for dermal exposure estimates
Spray duration	19,8 sec
Contact rate	269 mg/min
Release duration	0,33 min
	Relevant for dermal exposure estimates
Risk Management Measures	
Consumer Measures	Ensure spraying away from persons.
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Dermal model: constant application rate, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0047 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,001894
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Inhalation model: Exposure to spray/dust
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0057 mg/m³
Risk Characterization Ratio (RCR)	0,002718
	The exposure calculation is based on the mean concentration on the day of exposure.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC8: Biocidal Products.
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 1,4059 %
Vapour pressure of the substance during use	0,5472 Pa

Duration and Frequency of activity	Exposure duration: 240 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	90 uses per year
Room size	58 m3
Ventilation rate per hour	0,5
body weight	65 kg
Spray duration	19,8 sec
Contact rate	269 mg/min
Release duration	0,33 min
	Relevant for dermal exposure estimates
Risk Management Measures	
Consumer Measures	Ensure spraying away from persons.
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Dermal model: constant application rate
	Consumer - dermal, short-term - local
Exposure estimate	0,0001 mg/cm²/day
Risk Characterization Ratio (RCR)	0,000143
	The calculation is based on the external dose.
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Inhalation model: Exposure to spray/dust
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0057 mg/m³
Risk Characterization Ratio (RCR)	0,002718
	The exposure calculation is based on the mean concentration on the day of exposure.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC8: Biocidal Products.
	Air space
	post application (child)
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 1,4059 %
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	90 uses per year
Duration and Frequency of activity	Exposure duration: 60 min Relevant for oral exposure estimates

Duration and Frequency of activity	90 uses per year
body weight	8,69 kg
Contact area	22 cm² Relevant for dermal exposure estimates
	Relevant for dermal exposure estimates
Uptake fraction dermal	100 % Relevant for dermal exposure estimates
	Relevant for dermal exposure estimates
Uptake fraction oral	100 % Relevant for oral exposure estimates
	Relevant for oral exposure estimates
Transfer coefficient	1,666667 cm²/s
Dislodgeable amount	0,000082 g/cm²
Contact time	3600 sec
Rubbed surface	22 m²
Ingestion rate	1 mg/min
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Dermal model: rubbing off, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,1963 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,078513
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Oral model: constant rate, Uptake model: Uptake fraction
	Consumer - oral, long-term - systemic
Exposure estimate	0,0239 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,019947
	The calculation is based on the internal chronic dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC8: Biocidal Products.
	Air space
	post application (child)
Operational conditions	
Concentration of the substance	7-Hydroxycitronellal Content: >= 0 % - <= 1,4059 %
Vapour pressure of the substance during use	0,5472 Pa
Duration and Frequency of activity	Exposure duration: 60 min

	Relevant for oral exposure estimates
Duration and Frequency of activity	90 uses per year
body weight	8,69 kg
Contact area	22 cm² Relevant for dermal exposure estimates
	Relevant for dermal exposure estimates
Uptake fraction oral	100 % Relevant for oral exposure estimates
	Relevant for oral exposure estimates
Transfer coefficient	1,666667 cm²/s
Dislodgeable amount	0,000082 g/cm²
Contact time	3600 sec
Rubbed surface	22 m²
Ingestion rate	1 mg/min
Exposure estimate and reference to its source	
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Dermal model: rubbing off
	Consumer - dermal, short-term - local
Exposure estimate	0,0014 mg/cm²/day
Risk Characterization Ratio (RCR)	0,002882
	The calculation is based on the external dose.
Assessment method	EASY TRA v5.2, ConsExpo v4.1, Oral model: constant rate, Uptake model: Uptake fraction
	Consumer - oral, long-term - systemic
Exposure estimate	0,0239 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,019947
	The calculation is based on the internal chronic dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC8: Biocidal Products. Other products of this category do either not exceed a concentration of 1% for this substance or exposure estimations are covered by the calculations made for this product category. In accordance to Article 14 (2a) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be performed if the concentration of the substance in a preparation is less than the cut-off value referred to in Article 11, paragraph 3 of Regulation (EC) No 1272/2008.
Operational conditions	
Vapour pressure of the substance during use	0,5472 Pa

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