

## Safety data sheet

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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: 27.08.2023 Version: 4.0 Date previous version: 27.10.2017 Previous version: 3.0

Date / First version: 27.09.2016

Product: Citral N

(ID no. 30035011/SDS\_GEN\_BE/EN)

Date of print 07.10.2025

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

## 1.1. Product identifier

## Citral N

Chemical name: citral

INDEX-Number: 605-019-00-3 CAS Number: 5392-40-5

REACH registration number: 01-2119462829-23-0000, 01-2119462829-23-0013

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

Relevant identified uses: Chemical, Chemical for detergents, Chemical for soaps, detergents and cosmetic

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

BASF Belgium Coordination Center Comm.

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Drève Richelle 161 E Bte 43 1410 WATERLOO, BELGIUM

Contact address:

Telephone: +31 26 371 71 71

E-mail address: product-safety-benelux@basf.com

## 1.4. Emergency telephone number

Centre Antipoisons / Antigifcentrum + 32 70 245 245

to Regulation (EC) No 1907/2006.

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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]

Skin Sens. 1 H317 May cause an allergic skin reaction.
Eye Irrit. 2 H319 Causes serious eye irritation.
Skin Irrit. 2 H315 Causes skin irritation.

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.

H315 Causes skin 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.

to Regulation (EC) No 1907/2006.

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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

citral

CAS Number: 5392-40-5 Eye Dam./Irrit. 2 EC-Number: 226-394-6 Skin Sens. 1 INDEX-Number: 605-019-00-3 H319, H315, 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.

Skin Corr./Irrit. 2

## 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.

to Regulation (EC) No 1907/2006.

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## 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.

## 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: dry powder, foam, carbon dioxide, water spray

Unsuitable extinguishing media for safety reasons: water jet

## 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 a self-contained breathing apparatus.

#### Further information:

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems. 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.

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## 6.2. Environmental precautions

Do not discharge into drains/surface waters/groundwater. Inform authorities in the event of product spillage to water courses or sewage systems.

## 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. This product may cause irritations; wash your hands after every contact.

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

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

## 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

to Regulation (EC) No 1907/2006.

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5392-40-5: citral

Skin Designation (TLV (BE)), Vapor and aerosol The substance can be absorbed through the skin.

TWA value 32 mg/m3; 5 ppm (TLV (BE)), Vapor and aerosol

**PNEC** 

freshwater: 0,00678 mg/l

marine water: 0,000678 mg/l

intermittent release: 0,0678 mg/l

sediment (freshwater): 0,125 mg/kg

sediment (marine water): 0,0125 mg/kg

soil: 0,0209 mg/kg

STP: 1,6 mg/l

**DNEL** 

worker:

Long-term exposure- systemic effects, Inhalation: 9 mg/m3

worker:

Long-term exposure- systemic effects, dermal: 1,7 mg/kg

worker:

Long- and short-term exposure - local effects, dermal: 140 µg/cm<sup>3</sup>

consumer:

Long-term exposure- systemic effects, Inhalation: 2,7 mg/m3

consumer:

Long-term exposure- systemic effects, dermal: 1 mg/kg

consumer:

Long-term exposure- systemic effects, oral: 0,6 mg/kg

consumer:

Long- and short-term exposure - local effects, dermal: 140 µg/cm<sup>3</sup>

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## 8.2. Exposure controls

#### Personal protective equipment

Respiratory protection:

Wear respiratory protection if ventilation is inadequate. Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)

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

#### Hand protection:

Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN ISO 374-1):

butyl rubber (butyl) - 0.7 mm coating thickness

fluoroelastomer (FKM) - 0.7 mm coating thickness

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 depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

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

#### General safety and hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wearing of closed work clothing is required additionally to the stated personal protection equipment. Avoid contact with the skin, eyes and clothing. Do not breathe vapour/spray. 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

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Colour: colourless to yellowish

Odour: of lemon
Odour threshold: < 100 ppm

glass transition temperature: -115 °C (DSC (DIN 51007))

Boiling point: approx. 230 °C (other)

(1.013 hPa)

The substance / product

decomposes.

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: 98 °C (other)

Literature data.

Auto-ignition temperature: 225 °C (DIN 51794)

Literature data.

Thermal decomposition: approx. 180 °C (DSC (DIN 51007))

SADT: > 75 °C

Heat accumulation / Dewar 500 ml (SADT, UN-Test H.4, 28.4.4)

pH value:

not applicable

Viscosity, kinematic: 2,42 mm2/s (OECD 114)

(20 °C)

1,67 mm2/s (OECD 114)

(40 °C)

Viscosity, dynamic: 2,15 mPa.s (calculated (from kinematic

(20 °C) viscosity))

1,46 mPa.s (calculated (from kinematic

(40 °C) viscosity)) moderately soluble (other)

Solubility in water: moderately soluble

0,42 g/l (25 °C)

Partitioning coefficient n-octanol/water (log Kow): 2,76

(OECD Guideline 107)

(25 °C)

Vapour pressure: 0,046 hPa (calculated)

(20 °C)

0,071 hPa (calculated)

(25 °C)

1,003 hPa (measured)

(59,29 °C)

Relative density: 0,89 (other)

(20 °C)

Literature data.

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Density: 0,89 g/cm3

(20 °C)

Literature data.

Relative vapour density (air):5,24 (calculated)

(20 °C)

Heavier than air.

#### 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.

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:

The substance does not dissociate.,

Study scientifically not justified.

Adsorption/water - soil: log KOC: 2,1 (calculated)

Surface tension:

Based on chemical structure, surface

activity is not to be expected.

SAPT-Temperature:

Study scientifically not justified.

to Regulation (EC) No 1907/2006.

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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 Remarks: Forms no flammable gases in the

flammable gases: 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 all sources of ignition: heat, sparks, open flame. See SDS section 7 - Handling and storage.

## 10.5. Incompatible materials

Substances to avoid: 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:

Of low toxicity after single ingestion. Of low toxicity after short-term skin contact.

to Regulation (EC) No 1907/2006.

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## Experimental/calculated data:

LD50 rat (oral): approx. 6.800 mg/kg (BASF-Test) LD50 rat (dermal): > 2.000 mg/kg (BASF-Test)

#### Irritation

Assessment of irritating effects:

Skin contact causes irritation. Eye contact causes irritation.

#### Experimental/calculated data:

Skin corrosion/irritation

rabbit: Irritant. (BASF-Test) Serious eye damage/irritation rabbit: Irritant. (BASF-Test)

#### Respiratory/Skin sensitization

Assessment of sensitization:

Caused skin sensitization in animal studies. Caused sensitization in humans.

Experimental/calculated data:

Guinea pig maximization test guinea pig: skin sensitizing

#### Germ cell mutagenicity

Assessment of mutagenicity:

The substance was not mutagenic in bacteria. In the majority of tests performed (mammalian cell culture) a mutagenic effect was not found. A mutagenic effect was also not observed in in-vivo assays.

#### Carcinogenicity

#### Assessment of carcinogenicity:

Results from a number of long-term carcinogenity studies are available. Taking into account all of the information, there is no indication that the substance itself is carcinogenic.

## Reproductive toxicity

Assessment of reproduction toxicity:

The results of animal studies gave no indication of a fertility impairing effect.

#### **Developmental toxicity**

Assessment of teratogenicity:

Animal studies gave no indication of a developmental toxic effect at doses that were not toxic to the parental animals.

Specific target organ toxicity (single exposure)

#### Assessment of STOT single:

Based on available data, the classification criteria are not met.

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

Assessment of repeated dose toxicity:

Prolonged repeated exposure caused inflammable degenerative processes in the respiratory tract of rats. Causes irritating effects at esophagus and the gastro-intestinal tract.

#### **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 toxic for aquatic organisms. Depending on local conditions and existing concentrations, disturbances in the biodegradation process of activated sludge are possible.

## Toxicity to fish:

LC50 (96 h) 6,8 mg/l, Leuciscus idus (DIN 38412 Part 15, static)

The product has low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested. The details of the toxic effect relate to the nominal concentration.

## Aquatic invertebrates:

EC50 (48 h) approx. 7 mg/l, Daphnia magna (Directive 79/831/EEC, static)

The product has low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested. The details of the toxic effect relate to the nominal concentration.

#### Aquatic plants:

EC50 (72 h) 103,8 mg/l (growth rate), Scenedesmus subspicatus (DIN 38412 Part 9, static)

The product has low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested. The details of the toxic effect relate to the nominal concentration.

#### Microorganisms/Effect on activated sludge:

EC50 (30 min) 2.100 mg/l, Pseudomonas putida (DIN 38412 Part 27 (draft), aquatic)

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The product has low solubility in the test medium. An aqueous solution prepared with solubilizers has been tested. The details of the toxic effect relate to the nominal concentration.

EC20 (30 min) approx. 68 mg/l, activated sludge, domestic (OECD Guideline 209, aquatic)

Assessment of terrestrial toxicity:

No data available concerning terrestrial toxicity.

Study scientifically not justified.

## 12.2. Persistence and degradability

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

Elimination information:

92 % BOD of the ThOD (28 d) (OECD 301C; ISO 9408; 92/69/EEC, C.4-F) (aerobic, activated sludge, domestic)

> 90 % BOD of the ThOD (28 d) (OECD 301F; ISO 9408; 92/69/EEC, C.4-D) (aerobic, activated sludge, domestic)

Assessment of stability in water:

Substance is readily biodegradable, therefore hydrolysis is not expected to be relevant. Study scientifically not justified.

## 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 slowly 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

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## 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:
UN proper shipping name:
Transport hazard class(es):
Packing group:
Environmental hazards:
Special precautions for

Not applicable

user

**RID** 

Not classified as a dangerous good under transport regulations

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

None known

Special precautions for

user

to Regulation (EC) No 1907/2006.

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## **Inland waterway transport**

ADN

Not classified as a dangerous good under transport regulations

UN number or ID number:
UN proper shipping name:
Transport hazard class(es):
Packing group:
Environmental hazards:
Special precautions for

Not applicable
Not applicable
Not applicable
Not applicable
Not applicable

user:

## Transport in inland waterway vessel

Not evaluated

## Sea transport

#### **IMDG**

Not classified as a dangerous good under transport regulations

UN number or ID number:
UN proper shipping name:
Transport hazard class(es):
Packing group:
Environmental hazards:
Special precautions for

Not applicable
Not applicable
Not applicable
Not applicable
Not applicable
Not applicable

user

## Air transport

#### IATA/ICAO

Not classified as a dangerous good under transport regulations

UN number or ID number:
UN proper shipping name:
Transport hazard class(es):
Packing group:
Environmental hazards:
Special precautions for

Not applicable
Not applicable
Not applicable
Not applicable
Not applicable

user

## 14.1. UN number or ID number

See corresponding entries for "UN number or ID number" for the respective regulations in the tables above.

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## 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, 75

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

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

#### 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)

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Aquatic Acute 2 Acute Tox. 5 (dermal) Skin Irrit. 2 Eye Irrit. 2A Acute Tox. 5 (oral) Skin Sens. 1

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:

Skin Sens.

Eye Irrit.

Skin Irrit.

Skin sensitization

Eye irritation

Skin irritation

H319 Causes serious eye irritation.

H315 Causes skin irritation.

H317 May cause an allergic skin reaction.

## <u>Abbreviations</u>

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.

Version: 4.0

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.

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## **Annex: Exposure Scenarios**

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\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

## 1. Short title of exposure scenario

Use as an intermediate, (use in industrial settings) ERC6a; PROC2, PROC3, PROC8b, PROC9, PROC15

## Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC6a: Use of intermediate No assessment required - Industrial use as intermediate under strictly controlled conditions
Operational conditions	

## Contributing exposure scenario

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Use descriptors covered	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions  No assessment required - Industrial use as intermediate under strictly controlled conditions
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  No assessment required - Industrial use as intermediate under strictly controlled conditions
Contributing exposure scenario	
Use descriptors covered	PROC8b: Transfer of substance or mixture (charging and discharging) at dedicated facilities No assessment required - Industrial use as intermediate under strictly controlled conditions
Contributing exposure scenario	
Use descriptors covered	PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing).  No assessment required - Industrial use as intermediate under strictly controlled conditions
Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent.  No assessment required - Industrial use as intermediate under strictly controlled conditions

## 2. 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

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Operational conditions		
Annual amount per site	105.000 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		Municipal STP
Assumed sewage treatment plant flow	Assumed sewage treatment plant flow (m3/d) 2.000 m3/d	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,758684	
	Risk from environmental ex	kposure is driven by soil.
	553,6	
Maximum amount of safe use	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	citral Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	60 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	

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Wear chemically resistant gloves in combination with 'basic' employee	Effectiveness: 90 %
training.	
Avoid skin contact. Ensure	
minimization of manual phases	
Use suitable eye protection., Wear	
chemically resistant gloves in	
combination with 'basic' employee	
training.	
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,0034 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,002017
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - local
Exposure estimate	0,001 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,007143
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	0,0127 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,00141
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/t	ra

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	citral Content: >= 0 % - <= 100 %	
Physical state	liquid	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
Duration and Frequency of activity	240 min 5 days per week	
Indoor/Outdoor	Indoor	
Risk Management Measures		
Local exhaust ventilation	Effectiveness: 90 %	
Wear chemically resistant gloves in combination with 'basic' employee	Effectiveness: 90 %	

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training.	
Avoid skin contact. Ensure	
minimization of manual phases	
Use suitable eye protection., Wear	
chemically resistant gloves in	
combination with 'basic' employee	
training.	
Exposure estimate and reference to	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	0,0686 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,040336
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - local
Exposure estimate	0,02 mg/cm²/day
Risk Characterization Ratio (RCR)	0,142857
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1,1418 mg/m³
Risk Characterization Ratio (RCR)	0,126861
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/t	ra

Contributing exposure scenario		
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: industrial	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 100 %	
Physical state	liquid	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
Duration and Frequency of activity	240 min 5 days per week	
Indoor/Outdoor	Indoor	
Risk Management Measures		
Local exhaust ventilation	Effectiveness: 90 %	
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %	
Avoid skin contact. Ensure		
minimization of manual phases		
Use suitable eye protection., Wear		
chemically resistant gloves in		

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combination with 'basic' employee training.	
Exposure estimate and reference to	o its source
Assessment method	EASY TRA v4.2, Workplace measurements
	Worker - dermal, long-term - systemic
Exposure estimate	0,0691 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,040671
Assessment method	EASY TRA v4.2, Workplace measurements
	Worker - dermal, long-term - local
Exposure estimate	0,0101 mg/cm²/day
Risk Characterization Ratio (RCR)	0,072
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1,9029 mg/m³
Risk Characterization Ratio (RCR)	0,211435
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org	g/tra

Contributing exposure scenario	
Use descriptors covered	PROC5: Mixing or blending in batch processes Use domain: industrial
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	240 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Local exhaust ventilation	Effectiveness: 90 %
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %
Avoid skin contact. Ensure minimization of manual phases	
Use suitable eye protection., Wear chemically resistant gloves in combination with 'basic' employee training.	
Exposure estimate and reference to	
Assessment method	EASY TRA v4.2, Workplace measurements
	Worker - dermal, long-term - systemic

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Exposure estimate	0,0124 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,0073
Assessment method	EASY TRA v4.2, Workplace measurements
	Worker - dermal, long-term - local
Exposure estimate	0,0018 mg/cm²/day
Risk Characterization Ratio (RCR)	0,012929
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	1,9029 mg/m³
Risk Characterization Ratio (RCR)	0,211435
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	citral Content: >= 0 % - <= 25 %	
Physical state	liquid	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
Duration and Frequency of activity	240 min 5 days per week	
Indoor/Outdoor	Indoor	
Risk Management Measures		
Local exhaust ventilation	Effectiveness: 90 %	
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %	
Avoid skin contact. Ensure minimization of manual phases		
Use suitable eye protection., Wear chemically resistant gloves in combination with 'basic' employee training.		
Exposure estimate and reference to	its source	
Assessment method	EASY TRA v4.2, 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)	0,201681	

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Assessment method	EASY TRA v4.2, 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)	0,178571
Assessment method	EASY TRA v4.2, 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	0,9515 mg/m <sup>3</sup>
	, ,
Risk Characterization Ratio (RCR)	0,105718
Guidance to Downstream Users	
	/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	citral Content: >= 0 % - <= 100 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	60 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Local exhaust ventilation	Effectiveness: 95 %
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %
Avoid skin contact. Ensure minimization of manual phases	
Use suitable eye protection., Wear	
chemically resistant gloves in	
combination with 'basic' employee	
training.	
Exposure estimate and reference to	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - dermal, long-term - systemic
Exposure estimate	1,3714 mg/kg bw/day

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Risk Characterization Ratio (RCR)	0,806723	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker	
	Worker - dermal, long-term - local	
Exposure estimate	0,1 mg/cm <sup>2</sup> /day	
Risk Characterization Ratio (RCR)	0,714286	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker	
	Worker - inhalation, long-term - systemic	
Exposure estimate	0,3172 mg/m³	
Risk Characterization Ratio (RCR)	0,035239	
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	citral Content: >= 0 % - <= 25 %	
Physical state	liquid	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
Duration and Frequency of activity	60 min 5 days per week	
Indoor/Outdoor	Indoor	
Risk Management Measures		
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %	
Avoid skin contact. Ensure minimization of manual phases		
Use suitable eye protection., Wear chemically resistant gloves in combination with 'basic' employee training.		
Exposure estimate and reference to	its source	
Assessment method	EASY TRA v4.2, 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)	0,10084	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been	

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I	considered using a linear approach.
	Worker - dermal, long-term - local
Exposure estimate	0,025 mg/cm²/day
Risk Characterization Ratio (RCR)	0,178571
Assessment method	EASY TRA v4.2, 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	1,5858 mg/m³
Risk Characterization Ratio (RCR)	0,176196
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org exposure estimates)	/tra Please note that a modified version has been used (see

Contributing exposure scenario		
	PROC15: Use a laboratory reagent.	
Use descriptors covered	Use domain: industrial	
Operational conditions		
	citral	
Concentration of the substance	Content: >= 0 % - <= 100 %	
Dhysical state	liquid	
Physical state	liquid	
Vapour pressure of the substance during use	4,6 Pa	
during use	20 °C	
Process temperature	20 0	
Direction and Fraguency of activity	15 min 5 days per week	
Duration and Frequency of activity		
Indoor/Outdoor	Indoor	
Risk Management Measures		
Wear chemically resistant gloves in		
combination with 'basic' employee	Effectiveness: 90 %	
training.		
Avoid skin contact. Ensure		
minimization of manual phases		
Use suitable eye protection., Wear		
chemically resistant gloves in		
combination with 'basic' employee		
training.	ita accurac	
Exposure estimate and reference to		
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker	
Function at a	Worker - dermal, long-term - systemic	
Exposure estimate	0,0343 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,020168	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker	
Function at a	Worker - dermal, long-term - local	
Exposure estimate	0,01 mg/cm <sup>2</sup> /day	

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Risk Characterization Ratio (RCR)	0,071429
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Worker
	Worker - inhalation, long-term - systemic
Exposure estimate	3,1715 mg/m³
Risk Characterization Ratio (RCR)	0,352392
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/tra	

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

## 3. 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	405.000 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 i		
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,15352	
	Risk from environmental exposure is driven by freshwater.	
Maximum amount of safe use	10.552,4	

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	kg/d
Risk from environmental exposure is dri	ven by freshwater.

Contributing exposure scenario		
Use descriptors covered	AISE SPERC 2.1.b.v2: AISE SPERC 2.1.b.v2	
Operational conditions	1	
Annual amount used in the EU	162.000 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		
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,572208	
	Risk from environmental exposure is driven by soil.	
Maximum amount of safe use	1.132,5 se kg/d	
Risk from environmental exposure is dr	iven 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	126.000 kg	
Minimum emission days per year	250	
Emission factor air	0 %	

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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	l	
Wastewater treatment measures considered suitable are, e		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 v4.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,793612	
	Risk from environmental exposure is driven by soil.	
	567	
Maximum amount of safe use	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	117.000 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 consi	dered suitable are, e.g. Nanofiltration (NR),	

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		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 v4.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,414063	
	Risk from environmental e	xposure is driven by soil.
	1.130,3	
Maximum amount of safe use	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	63.000 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		
Assessment method	EASY TRA v4.2, ECETO	C TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,445692	
	Risk from environmental exposure is driven by soil.	
Maximum amount of safe use	565,4	

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Maximum amount of safe use

Risk from environmental exposure is driven by soil.

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	kg/d	
Risk from environmental exposure is d	riven by soil.	
Contributing exposure scenario	AICE ODEDO O A L. O. AI	OF ODEDO 0.4 L. 0
Use descriptors covered	AISE SPERC 2.1.I.v2: Al	SE SPERC 2.1.I.V2
Operational conditions		
Annual amount used in the EU	63.000 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 v4.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,888499	
Risk from environmental exposure is driven by soil.		exposure is driven by soil.
	283,6	

Contributing exposure scenario	
Use descriptors covered	ERC2: Formulation into mixture
Operational conditions	<u> </u>
Annual amount used in the EU	180.000 kg
Minimum emission days per year	250

kg/d

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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 v4.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,060068	
	Risk from environmental exposure is driven by freshwater.	
Maximum amount of safe use	11.986,3 kg/d	
Risk from environmental exposure is driven by freshwater.		

Contributing exposure scenario			
Use descriptors covered	ERC2: Formulation into mixture		
Operational conditions	Operational conditions		
Annual amount per site	12.000 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			
Assumed sewage treatment plant flow (m3/d)		2.000 m3/d	

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Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Environment
Risk Characterization Ratio (RCR)	0,846327
	Risk from environmental exposure is driven by soil.
	56,7
Maximum amount of safe use	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	citral Content: >= 0 % - <= 25 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	60 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %
Avoid skin contact. Ensure minimization of manual phases	
Use suitable eye protection., Wear chemically resistant gloves in combination with 'basic' employee training.	
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, 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)	0,000504
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
	Worker - dermal, long-term - local

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Exposure estimate	0,0003 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,001786
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	0,0032 mg/m³
Risk Characterization Ratio (RCR)	0,000352
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	citral Content: >= 0 % - <= 25 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	240 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %
Avoid skin contact. Ensure minimization of manual phases	
Use suitable eye protection., Wear chemically resistant gloves in combination with 'basic' employee training.	
Exposure estimate and reference to	
Assessment method	EASY TRA v4.2, 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)	0,010084

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Assessment method	EASY TRA v4.2, 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/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,035714
Assessment method	EASY TRA v4.2, 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	2,8544 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,317153
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 expecuse constitution	
Contributing exposure scenario	
	PROC5: Mixing or blending in batch processes
Use descriptors covered	Use domain: industrial
Operational conditions	
	citral
Concentration of the substance	Content: >= 0 % - <= 25 %
Physical state	liquid
Vapour pressure of the substance	4,6 Pa
during use	
Process temperature	20 °C
Duration and Frequency of activity	240 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Wear chemically resistant gloves in	
combination with 'basic' employee	Effectiveness: 90 %
training.	
Avoid skin contact. Ensure	
minimization of manual phases	
Use suitable eye protection., Wear	
chemically resistant gloves in	
combination with 'basic' employee	
training.	
Exposure estimate and reference to its source	
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	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

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Risk Characterization Ratio (RCR)	0,201681
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - dermal, long-term - local
Exposure estimate	0,05 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,357143
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	4,7573 mg/m³
Risk Characterization Ratio (RCR)	0,528588
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	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	citral Content: >= 0 % - <= 1 %	
Physical state	liquid	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
Duration and Frequency of activity	240 min 5 days per week	
Indoor/Outdoor	Indoor	
Exposure estimate and reference to	its source	
Assessment method	EASY TRA v4.2, 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	0,1371 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,080672	
Assessment method	EASY TRA v4.2, 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	0,01 mg/cm²/day	
Risk Characterization Ratio (RCR)	0,071429	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified	

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	version, The concentration of the substance has been considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	0,3806 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,042287
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	citral Content: >= 0 % - <= 25 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	60 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %
Avoid skin contact. Ensure minimization of manual phases	
Use suitable eye protection., Wear chemically resistant gloves in combination with 'basic' employee training.	
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, 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)	0,201681
Assessment method	EASY TRA v4.2, 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/cm <sup>2</sup> /day

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Risk Characterization Ratio (RCR)	0,178571
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	1,5858 mg/m³
Risk Characterization Ratio (RCR)	0,176196
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 PROC9: Transfer of substance or preparation into small containers (dedicated filling line, including weighing). Use descriptors covered Use domain: industrial **Operational conditions** citral Concentration of the substance Content: >= 0 % - <= 1 % Physical state liquid Vapour pressure of the substance 4,6 Pa during use 20 °C Process temperature 60 min 5 days per week **Duration and Frequency of activity** Indoor/Outdoor Indoor Exposure estimate and reference to its source EASY TRA v4.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been Assessment method considered using a linear approach. Worker - dermal, long-term - systemic Exposure estimate 0,0686 mg/kg bw/day 0,040336 Risk Characterization Ratio (RCR) EASY TRA v4.2, ECETOC TRA v3.0, worker, modified version. The concentration of the substance has been Assessment method considered using a linear approach. Worker - dermal, long-term - local 0,01 mg/cm<sup>2</sup>/day Exposure estimate Risk Characterization Ratio (RCR) 0,071429 EASY TRA v4.2, ECETOC TRA v3.0, worker, modified Assessment method version. The concentration of the substance has been considered using a linear approach. Worker - inhalation, long-term - systemic 0,0634 mg/m<sup>3</sup> Exposure estimate Risk Characterization Ratio (RCR) 0,007048 Guidance to Downstream Users

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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	PROC14: Tabletting, compression, extrusion, pelletisation, granulation Use domain: industrial
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 1 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, 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	0,0343 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,020168
Assessment method	EASY TRA v4.2, 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/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,035714
Assessment method	EASY TRA v4.2, 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	0,3172 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,035239
Guidance to Downstream Users	1 -1
	/tra Please note that a modified version has been used (see

Contributing exposure scenario	
Use descriptors covered	PROC15: Use a laboratory reagent. Use domain: industrial
Operational conditions	

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Concentration of the substance  Physical state Vapour pressure of the substance during use  Process temperature  Duration and Frequency of activity  Indoor/Outdoor  Risk Management Measures  Wear chemically resistant gloves in combination with 'basic' employee training.  Avoid skin contact. Ensure minimization of manual phases  Iiquid  4,6 Pa  20 °C  15 min 5 days per week  Indoor  Indoor  Effectiveness: 90 %  Effectiveness: 90 %		citral
Vapour pressure of the substance during use  Process temperature  Duration and Frequency of activity  Indoor/Outdoor  Risk Management Measures  Wear chemically resistant gloves in combination with 'basic' employee training.  Avoid skin contact. Ensure minimization of manual phases  4,6 Pa  20 °C  15 min 5 days per week  Indoor  Effectiveness: 90 %  Effectiveness: 90 %	Concentration of the substance	Content: >= 0 % - <= 25 %
Vapour pressure of the substance during use  Process temperature  Duration and Frequency of activity  Indoor/Outdoor  Risk Management Measures  Wear chemically resistant gloves in combination with 'basic' employee training.  Avoid skin contact. Ensure minimization of manual phases  4,6 Pa  20 °C  15 min 5 days per week  Indoor  Effectiveness: 90 %  Effectiveness: 90 %		
during use  Process temperature  Duration and Frequency of activity  Indoor/Outdoor  Risk Management Measures  Wear chemically resistant gloves in combination with 'basic' employee training.  Avoid skin contact. Ensure minimization of manual phases  20 °C  15 min 5 days per week  Indoor  Effectiveness: 90 %  Effectiveness: 90 %		
Process temperature  Duration and Frequency of activity  Indoor/Outdoor  Risk Management Measures  Wear chemically resistant gloves in combination with 'basic' employee training.  Avoid skin contact. Ensure minimization of manual phases		4,6 Pa
Duration and Frequency of activity  Indoor/Outdoor  Risk Management Measures  Wear chemically resistant gloves in combination with 'basic' employee training.  Avoid skin contact. Ensure minimization of manual phases	during use	
Duration and Frequency of activity  Indoor/Outdoor  Risk Management Measures  Wear chemically resistant gloves in combination with 'basic' employee training.  Avoid skin contact. Ensure minimization of manual phases	Process temperature	20 °C
Indoor/Outdoor Indoor  Risk Management Measures  Wear chemically resistant gloves in combination with 'basic' employee training.  Avoid skin contact. Ensure minimization of manual phases		45 . 5 .
Risk Management Measures  Wear chemically resistant gloves in combination with 'basic' employee training.  Avoid skin contact. Ensure minimization of manual phases	Duration and Frequency of activity	15 min 5 days per week
Risk Management Measures  Wear chemically resistant gloves in combination with 'basic' employee training.  Avoid skin contact. Ensure minimization of manual phases	Indoor/Outdoor	Indoor
Wear chemically resistant gloves in combination with 'basic' employee training.  Effectiveness: 90 %  Avoid skin contact. Ensure minimization of manual phases		IIIuuu
combination with 'basic' employee training.  Effectiveness: 90 %  Avoid skin contact. Ensure minimization of manual phases		
training. Avoid skin contact. Ensure minimization of manual phases		Effectiveness: 90 %
Avoid skin contact. Ensure minimization of manual phases		21100111000.00 70
	minimization of manual phases	
Use suitable eye protection., Wear	Use suitable eye protection., Wear	
chemically resistant gloves in		
combination with 'basic' employee		
training.		
Exposure estimate and reference to its source		
EASY TRA v4.2, ECETOC TRA v3.0, worker, modified		
Assessment method version, The concentration of the substance has been	Assessment method	
considered using a linear approach.		
Worker - dermal, long-term - systemic	Evacuus estimate	
Exposure estimate 0,0086 mg/kg bw/day  Risk Characterization Ratio (RCR) 0,005042		
EASY TRA v4.2, ECETOC TRA v3.0, worker, modified	RISK Characterization Ratio (RCR)	
Assessment method version, The concentration of the substance has been	Assessment method	
considered using a linear approach.	Assessment method	· · · · · · · · · · · · · · · · · · ·
Worker - dermal, long-term - local		
Exposure estimate 0,0025 mg/cm²/day	Exposure estimate	
Risk Characterization Ratio (RCR) 0,017857		
EASY TRA v4.2, ECETOC TRA v3.0, worker, modified		
Assessment method version, The concentration of the substance has been	Assessment method	
considered using a linear approach.		
Worker - inhalation, long-term - systemic		
Exposure estimate 0,7929 mg/m³		
Risk Characterization Ratio (RCR) 0,088098	\ /	0,088098
Guidance to Downstream Users		
For scaling see: http://www.ecetoc.org/tra Please note that a modified version has been used (see		
exposure estimates)	exposure estimates)	

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# 4. Short title of exposure scenario

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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

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Use in Cleaning Agents, (use in industrial settings) ERC4; PROC1, PROC2, PROC4, PROC7, PROC8b, PROC10, PROC13

### Control of exposure and risk management measures

Contributing exposure scenario	
Use descriptors covered	ERC4: Use of non-reactive processing aid at industrial site (no inclusion into or onto article)
Operational conditions	

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	citral Content: >= 0 % - <= 1,1999 %	
Physical state	liquid	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
Duration and Frequency of activity	480 min 5 days per week	
Indoor/Outdoor	Indoor	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.	
Europeuro potimento	Worker - dermal, long-term - systemic	
Exposure estimate	0,0004 mg/kg bw/day	
Risk Characterization Ratio (RCR)  Assessment method	0,000242  EASY TRA v4.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.	
Evnosure estimate	Worker - inhalation, long-term - systemic 0,0008 mg/m³	
Exposure estimate Risk Characterization Ratio (RCR)	0,0008119/119	
Guidance to Downstream Users	0,00000	
	g/tra Please note that a modified version has been used (see	
exposure estimates)	grad i lodge flote that a filodified version has been used (see	

Contributing exposure scenario	
Use descriptors covered	PROC2: Chemical production or refinery in closed

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	continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: industrial
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 1,1999 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, 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	0,0165 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,009681
Assessment method	EASY TRA v4.2, 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	0,0761 mg/m³
Risk Characterization Ratio (RCR)	0,008457
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/ exposure estimates)	/tra Please note that a modified version has been used (see

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: industrial
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 1,1999 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week

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Indoor/Outdoor	Indoor
Exposure estimate and reference to	its source
•	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - dermal, long-term - systemic
Exposure estimate	0,0823 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,048403
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	0,3806 mg/m³
Risk Characterization Ratio (RCR)	0,042287
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	PROC7: Industrial spraying Use domain: industrial
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 1,1999 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	60 min 5 days per week
Indoor/Outdoor	Outdoor
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, 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	0,5143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,302521
Assessment method	EASY TRA v4.2, 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	0,024 mg/cm²/day
Risk Characterization Ratio (RCR)	0,171429

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Assessment method	EASY TRA v4.2, Workplace measurements
7.000000	Worker - inhalation, long-term - systemic
Exposure estimate	0,06 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,006667
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	
	PROC7: Industrial spraying
Use descriptors covered	Use domain: industrial
Operational conditions	
	citral
Concentration of the substance	Content: >= 0 % - <= 1,1999 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Local exhaust ventilation	Effectiveness: 95 %
Exposure estimate and reference to	o its source
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - dermal, long-term - systemic
Exposure estimate	0,5143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,302521
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - dermal, long-term - local
Exposure estimate	0,024 mg/cm²/day
Risk Characterization Ratio (RCR)	0,171429
Assessment method	EASY TRA v4.2, Workplace measurements
	Worker - inhalation, long-term - systemic
Exposure estimate	0,12 mg/m³
Risk Characterization Ratio (RCR)	0,013333
Guidance to Downstream Users	( D)
	g/tra Please note that a modified version has been used (see
exposure estimates)	

# Contributing exposure scenario

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Use descriptors covered	PROC7: Industrial spraying Use domain: industrial
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 1,1999 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, 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	0,5143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,302521
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.
E	Worker - dermal, long-term - local
Exposure estimate	0,024 mg/cm²/day
Risk Characterization Ratio (RCR)	0,171429
Assessment method	EASY TRA v4.2, Workplace measurements
Francisco estimante	Worker - inhalation, long-term - systemic
Exposure estimate	0,29 mg/m³
Risk Characterization Ratio (RCR)	0,032222
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	PROC7: Industrial spraying Use domain: industrial
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 1,1999 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C

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Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Exposure estimate and reference to its source	
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - dermal, long-term - systemic
Exposure estimate	0,5143 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,302521
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - dermal, long-term - local
Exposure estimate	0,024 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,171429
Assessment method	EASY TRA v4.2, Workplace measurements
	Worker - inhalation, long-term - systemic
Exposure estimate	0,09 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,01
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	citral Content: >= 0 % - <= 1,1999 %	
Physical state	liquid	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
Duration and Frequency of activity	60 min 5 days per week	
Indoor/Outdoor	Indoor	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, 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	0,1646 mg/kg bw/day	

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Risk Characterization Ratio (RCR)	0,096807
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	0,0761 mg/m³
Risk Characterization Ratio (RCR)	0,008457
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	
PROC10: Roller application or brushing	
Use descriptors covered	Use domain: industrial
Operational conditions	
	citral
Concentration of the substance	Content: >= 0 % - <= 1,1999 %
Physical state	liquid
Vapour pressure of the substance	4,6 Pa
during use	
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Outdoor
Risk Management Measures	
Wear chemically resistant gloves in	
combination with 'basic' employee	Effectiveness: 90 %
training.	
Exposure estimate and reference to it	
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - dermal, long-term - systemic
Exposure estimate	0,0329 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,019361
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	0,5328 mg/m³
Risk Characterization Ratio (RCR)	0,059202
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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Contributing exposure scenario	
Use descriptors covered	PROC13: Treatment of articles by dipping and pouring. Use domain: industrial
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 1,1999 %
Concentration of the substance	Contoni: >= 0 /0 <= 1,1000 /0
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Local exhaust ventilation	Effectiveness: 90 %
Wear chemically resistant gloves in combination with 'basic' employee	Effectiveness: 90 %
training.	Effective fields. 50 70
Exposure estimate and reference to	o its source
Assessment method	EASY TRA v4.2, 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	0,0165 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,009681
Assessment method	EASY TRA v4.2, 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	0,0761 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,008457
Guidance to Downstream Users	
	g/tra Please note that a modified version has been used (see
exposure estimates)	

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

### 5. Short title of exposure scenario

Use in Cleaning Agents, (use in professional settings) ERC8a, ERC8d; PROC1, PROC2, PROC4, PROC8a, PROC8b, PROC10, PROC11, PROC13

### Control of exposure and risk management measures

### Contributing exposure scenario

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Use descriptors covered	ERC8a: Widespread use of (no inclusion into or onto as	f non-reactive processing aid rticle, indoor)
Operational conditions		
Annual amount used in the EU	900.000 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 (		2.000 m3/d
Exposure estimate and reference to		
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,436161	
	Risk from environmental exposure is driven by soil.	
Maximum amount of safe use	1,1 kg/d	
Risk from environmental exposure is dr	iven 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	<u> </u>	
Annual amount used in the EU	900.000 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	

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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 v4.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,436161	
	Risk from environmental exposure is driven by soil.	
	1,1	•
Maximum amount of safe use	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: professional
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 1,1999 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to	
Assessment method	EASY TRA v4.2, 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	0,0004 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00041
Assessment method	EASY TRA v4.2, 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	0,0008 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,000085

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### 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	Contributing exposure scenario		
Use descriptors covered	PROC2: Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Use domain: professional		
Operational conditions			
Concentration of the substance	citral Content: >= 0 % - <= 1,1999 %		
Physical state	liquid		
Vapour pressure of the substance during use	4,6 Pa		
Process temperature	20 °C		
Duration and Frequency of activity	480 min 5 days per week		
Indoor/Outdoor	Indoor		
Exposure estimate and reference to its source			
Assessment method	EASY TRA v4.2, 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	0,0165 mg/kg bw/day		
Risk Characterization Ratio (RCR)	0,009681		
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been considered using a linear approach.		
Evposure estimate	Worker - inhalation, long-term - systemic		
Exposure estimate	0,3806 mg/m³ 0,042287		
Risk Characterization Ratio (RCR)  Guidance to Downstream Users	U,U42201		
	y/tra Plagge note that a modified version has been used /see		
	y/tra Please note that a modified version has been used (see		
exposure estimates)			

Contributing exposure scenario	
Use descriptors covered	PROC4: Chemical production where opportunity for exposure arises Use domain: professional
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 1,1999 %

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Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	480 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to	ts source
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - dermal, long-term - systemic
Exposure estimate	0,0823 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,048403
Assessment method	EASY TRA v4.2, 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	0,7612 mg/m³
Risk Characterization Ratio (RCR)	0,084574
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/texposure estimates)	ra Please note that a modified version has been used (see

Contributing exposure scenario	
Use descriptors covered	PROC8a: Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Use domain: professional
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 1,1999 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	60 min 5 days per week
Indoor/Outdoor	Indoor
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, 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	0,1646 mg/kg bw/day

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Risk Characterization Ratio (RCR)	0,096807
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	0,3806 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,042287
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: professional	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 1,1999 %	
Physical state	liquid	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
Duration and Frequency of activity	60 min 5 days per week	
Indoor/Outdoor	Indoor	
Risk Management Measures		
Wear chemically resistant gloves in combination with 'basic' employee training.	Effectiveness: 90 %	
Exposure estimate and reference to	its source	
Assessment method	EASY TRA v4.2, 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	0,0165 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,009681	
Assessment method	EASY TRA v4.2, 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	0,1522 mg/m³	
Risk Characterization Ratio (RCR)	0,016915	
Guidance to Downstream Users	The Division of the Control of the C	
	y/tra Please note that a modified version has been used (see	
exposure estimates)		

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Contributing exposure scenario		
	PROC10: Roller application or brushing	
Use descriptors covered	Use domain: professional	
Operational conditions		
	citral	
Concentration of the substance	Content: >= 0 % - <= 1,1999 %	
Physical state	liquid	
Vapour pressure of the substance	4,6 Pa	
during use		
Process temperature	20 °C	
	480 min 5 days per week	
Duration and Frequency of activity		
Indoor/Outdoor	Indoor	
Exposure estimate and reference to its source		
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified	
Assessment method	version, The concentration of the substance has been	
	considered using a linear approach.	
	Worker - dermal, long-term - systemic	
Exposure estimate	0,3291 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,193613	
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified	
Assessment method	version, The concentration of the substance has been	
	considered using a linear approach.	
	Worker - inhalation, long-term - systemic	
Exposure estimate	1,9029 mg/m³	
Risk Characterization Ratio (RCR)	0,211435	
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	PROC11: Non industrial spraying Use domain: professional
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 1,1999 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	60 min 5 days per week

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Indoor/Outdoor	Indoor
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, 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	1,2857 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,756302
Assessment method	EASY TRA v4.2, 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	0,06 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,428571
Assessment method	EASY TRA v4.2, Workplace measurements
	Worker - inhalation, long-term - systemic
Exposure estimate	0,18 mg/m³
Risk Characterization Ratio (RCR)	0,02
Guidance to Downstream Users	
For scaling see: http://www.ecetoc.org/exposure estimates)	tra Please note that a modified version has been used (see

Contributing exposure scenario		
Use descriptors covered	PROC11: Non industrial spraying Use domain: professional	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 1,1999 %	
Physical state	liquid	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
Duration and Frequency of activity	60 min 5 days per week	
Indoor/Outdoor	Outdoor	
Exposure estimate and reference to	its source	
Assessment method	EASY TRA v4.2, 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	1,2857 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,756302	
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified version, The concentration of the substance has been	

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considered using a linear approach.	
	Worker - dermal, long-term - local
Exposure estimate	0,06 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,428571
Assessment method	EASY TRA v4.2, Workplace measurements
	Worker - inhalation, long-term - systemic
Exposure estimate	0,06 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,006667
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 PROC11: Non industrial spraying Use descriptors covered Use domain: professional Operational conditions citral Concentration of the substance Content: >= 0 % - <= 1,1999 % Physical state liquid Vapour pressure of the substance 4,6 Pa during use 20 °C Process temperature 480 min 5 days per week **Duration and Frequency of activity** Indoor/Outdoor Indoor Risk Management Measures Wear chemically resistant gloves in combination with 'basic' employee Effectiveness: 90 % training. Exposure estimate and reference to its source EASY TRA v4.2, ECETOC TRA v3.0, worker, modified version. The concentration of the substance has been Assessment method considered using a linear approach. Worker - dermal, long-term - systemic 0,1286 mg/kg bw/day Exposure estimate Risk Characterization Ratio (RCR) 0,07563 EASY TRA v4.2, ECETOC TRA v3.0, worker, modified Assessment method version, The concentration of the substance has been considered using a linear approach. Worker - dermal, long-term - local 0,006 mg/cm<sup>2</sup>/day Exposure estimate Risk Characterization Ratio (RCR) 0,042857 Assessment method EASY TRA v4.2, Workplace measurements Worker - inhalation, long-term - systemic 0,29 mg/m<sup>3</sup> Exposure estimate

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Risk Characterization Ratio (RCR)	0,032222
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	PROC13: Treatment of articles by dipping and pouring. Use domain: professional
ose descriptors covered	Ose domain. professional
Operational conditions	
	citral
Concentration of the substance	Content: >= 0 % - <= 1,1999 %
Physical state	liquid
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	60 min 5 days per week
Indoor/Outdoor	Indoor
Risk Management Measures	
Wear chemically resistant gloves in	
combination with 'basic' employee	Effectiveness: 90 %
training.	
Exposure estimate and reference to	
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - dermal, long-term - systemic
Exposure estimate	0,0165 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,009681
	EASY TRA v4.2, ECETOC TRA v3.0, worker, modified
Assessment method	version, The concentration of the substance has been
	considered using a linear approach.
	Worker - inhalation, long-term - systemic
Exposure estimate	0,1522 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,016915
Guidance to Downstream Users	
	g/tra Please note that a modified version has been used (see
exposure estimates)	

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### 6. Short title of exposure scenario

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

ERC8a; PC3

to Regulation (EC) No 1907/2006.

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(ID no. 30035011/SDS\_GEN\_BE/EN)

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## **Control of exposure and risk management measures**

Contributing exposure scenario		
Use descriptors covered	ERC8a: Widespread use of (no inclusion into or onto a	of non-reactive processing aid rticle, indoor)
Operational conditions		
Annual amount used in the EU	900.000 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		
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,436161	
	Risk from environmental ex	xposure is driven by soil.
	1,1	
Maximum amount of safe use	kg/d	
Risk from environmental exposure is d	riven by soil.	

Contributing exposure scenario	
Use descriptors covered	PC3: Air care products.
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 9 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 480 min

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	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 v4.2, ConsExpo v4.1, Inhalation model: Exposure to spray/dust
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0385 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,014247
	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/h	ealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario	
Use descriptors covered	PC3: Air care products.
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,45 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
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 %
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.

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Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant
	application rate, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0015 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,001515
	The calculation is based on the internal chronic dose.
A a a a a a man a man a tha a d	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	Exposure to spray/dust
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0018 mg/m³
Risk Characterization Ratio (RCR)	0,000677
	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.		
Operational conditions			
Concentration of the substance	citral Content: >= 0 % - <= 0,45 %		
Vapour pressure of the substance during use	4,6 Pa		
Process temperature	20 °C		
body weight	65 kg		
Contact rate	269 mg/min		
Release duration	0,33 min		
	Relevant for dermal exposure estimates		
Exposure estimate and reference to	its source		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant application rate		
	Consumer - dermal, short-term - local		
Exposure estimate	0,0001 mg/cm <sup>2</sup> /day		
Risk Characterization Ratio (RCR)	0,000163		
	The calculation is based on the external dose.		
Guidance to Downstream Users			
For scaling see: http://www.rivm.nl/en/h	nealthanddisease/productsafety/ConsExpo.jsp		

Contributing exposure scenario	
Use descriptors covered	PC3: Air care products.
Operational conditions	
Concentration of the substance	citral

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	Content: >= 0 % - <= 0,45 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
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	
Uptake fraction dermal	100 %	
Uptake fraction oral	100 %	
Transfer coefficient	1,666667 cm <sup>2</sup> /s	
Dislodgeable amount	0,000082 g/cm <sup>2</sup>	
Contact time	3600 sec	
Rubbed surface	22 m²	
Ingestion rate	0,003688 mg/min	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: rubbing off, Uptake model: Uptake fraction	
	Consumer - dermal, long-term - systemic	
Exposure estimate	0,0628 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,062821	
	The calculation is based on the internal chronic dose.	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Oral model: constant rate, Uptake model: Uptake fraction	
	Consumer - oral, long-term - systemic	
Exposure estimate	0,0001 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,000047	
	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	PC3: Air care products.	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 0,45 %	
Vapour pressure of the substance during use	4,6 Pa	

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Process temperature	20 °C	
body weight	8,69 kg	
Transfer coefficient	1,666667 cm <sup>2</sup> /s	
Dislodgeable amount	0,000082 g/cm <sup>2</sup>	
Contact time	3600 sec	
Rubbed surface	22 m²	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: rubbing off	
	Consumer - dermal, short-term - local	
Exposure estimate	0,0005 mg/cm <sup>2</sup> /day	
Risk Characterization Ratio (RCR)	0,003295	
	The calculation is based on the external dose.	
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 0.1% for this substance or exposure estimations are covered by the calculations made for this product category. In accordance to Article 14 (2b) 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 0,1% weight by weight (w/w) and if the substance meets the criteria in Annex XIII to this Regulation.		
Operational conditions			
Vapour pressure of the substance during use	4,6 Pa		
Process temperature	20 °C		

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### 7. 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

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	(no inclusion into or onto article, indoor)			
Operational conditions				
Annual amount used in the EU	900.000 kg			
Minimum emission days per year	365			
Emission factor air	100 %			
Emission factor water	100 %	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				
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Environment			
Risk Characterization Ratio (RCR)	0,436161			
	Risk from environmental exposure is driven by soil.			
Maximum amount of safe use	1,1 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	4,6 Pa
Process temperature	20 °C

Contributing exposure scenario	
	PC39: Cosmetics, personal care products.
	In accordance to the Article 14 (5b) of the REACh

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	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	4,6 Pa
Process temperature	20 °C

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

### 8. Short title of exposure scenario

Use in Cleaning Agents, (consumer use) ERC8a, ERC8d; PC31, PC35

## Control of exposure and risk management measures

Contributing exposure scenario			
Has descriptors severed	ERC8a: Widespread use of non-reactive processing aid		
Use descriptors covered	(no inclusion into or onto article, indoor)		
Operational conditions			
Annual amount used in the EU	900.000 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 (	v (m3/d) 2.000 m3/d		
Exposure estimate and reference to its source			
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Environment		
Risk Characterization Ratio (RCR)	0,436161		
	Risk from environmental exposure is driven by soil.		

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Maximum amount of safe use	1,1 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	900.000 kg			
Minimum emission days per year	365	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				
Exposure estimate and reference to its source				
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Environment			
Risk Characterization Ratio (RCR)	0,436161			
	Risk from environmental exposure is driven by soil.			
	1,1			
Maximum amount of safe use	kg/d			
Risk from environmental exposure is d	riven by soil.			

Contributing exposure scenario	
Use descriptors covered	PC31: Polishes and Wax Blends.
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C

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Duration and Frequency of activity	26 uses per year
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,1 g Relevant for dermal exposure
	estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant
Assessment method	application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0002 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000175
	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	PC31: Polishes and Wax Blends.
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg
	Amount per use 0,1 g Relevant for dermal exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application
	Consumer - dermal, short-term - local
Exposure estimate	0,0007 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,005316
	The calculation is based on the external dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC31: Polishes and Wax Blends.
Operational conditions	

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l	citral
Concentration of the substance	Content: >= 0 % - <= 0,16 %
	2, 21
Vapour pressure of the substance	4,6 Pa
during use	
Process temperature	20 °C
Process temperature	
Duration and Frequency of activity	Exposure duration: 5 min
Buration and Frequency of delivity	Relevant for inhalative exposure estimates
Duration and Frequency of activity	8 uses per year
· · · · · ·	
Room size	34 m3
Ventilation rate per hour	1,5
body weight	65 kg
are, magin	100.04
Uptake fraction dermal	100 %
·	72 000
Spray duration Contact rate	72 sec
	100 mg/min
Release duration	1,2 min
Risk Management Measures	Relevant for dermal exposure estimates
Consumer Measures	Encurs aproving away from paragna
Exposure estimate and reference to	Ensure spraying away from persons.
Exposure estimate and reference to	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant
Assessment method	application rate, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0001 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00065
KISK Characterization Ratio (RCR)	The calculation is based on the internal chronic dose.
	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	Exposure to spray/dust
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0011 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,000416
onaracionzadon riduo (riori)	The exposure calculation is based on the mean
	concentration on the day of exposure.
Guidance to Downstream Users	same and any or orposare.
	nealthanddisease/productsafety/ConsExpo.jsp
	-cam-a

Contributing exposure scenario		
Use descriptors covered	PC31: Polishes and Wax Blends.	
Operational conditions		
•	citral	
Concentration of the substance	Content: >= 0 % - <= 0,16 %	
Vapour pressure of the substance	4,6 Pa	

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during use		
Process temperature	20 °C	
body weight	65 kg	
Contact rate	100 mg/min	
Release duration	1,2 min	
	Relevant for dermal exposure estimates	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant	
Assessment method	application rate	
	Consumer - dermal, short-term - local	
Exposure estimate	0,0001 mg/cm²/day	
Risk Characterization Ratio (RCR)	0,000659	
	The calculation is based on the external dose.	
Guidance to Downstream Users		
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp		

Contributing exposure scenario	
Use descriptors covered	PC31: Polishes and Wax Blends.
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 90 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 90 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	2 uses per year
Room size	58 m3
Ventilation rate per hour	0,5
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 5,5 g Relevant for dermal exposure estimates
Release area	220000 cm <sup>2</sup>
	Release area increases over time
Release duration	90 min
	Relevant for inhalative exposure estimates

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Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0007 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000742
	The calculation is based on the internal chronic dose.
A	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0041 mg/m³
Risk Characterization Ratio (RCR)	0,001529
	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	PC31: Polishes and Wax Blends.
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg
	Amount per use 5,5 g Relevant for dermal exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application
	Consumer - dermal, short-term - local
Exposure estimate	0,0205 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,146179
	The calculation is based on the external dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC31: Polishes and Wax Blends.
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %

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Vapour pressure of the substance	4,6 Pa
during use	
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 240 min
	Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 90 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	1 uses per year
Room size	58 m3
Ventilation rate per hour	0,5
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 5,5 g Relevant for dermal exposure
	estimates
Release area	220000 cm <sup>2</sup>
	Release area increases over time
Release duration	90 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0004 mg/kg bw/day
Risk Characterization Ratio (RCR)	0.000371
,	The calculation is based on the internal chronic dose.
Assessment with a l	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,1349 mg/m³
Risk Characterization Ratio (RCR)	0,049967
,	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	PC31: Polishes and Wax Blends.	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %	

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Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
body weight	65 kg	
	Amount per use 5,5 g Relevant for dermal exposure	
	estimates	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant	
	application	
	Consumer - dermal, short-term - local	
Exposure estimate	0,0205 mg/cm <sup>2</sup> /day	
Risk Characterization Ratio (RCR)	0,146179	
	The calculation is based on the external dose.	
Guidance to Downstream Users		
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp		

Contributing exposure scenario		
Use descriptors covered	PC31: Polishes and Wax Blends.	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
Duration and Frequency of activity	Exposure duration: 240 min Relevant for inhalative exposure estimates	
Duration and Frequency of activity	1 uses per year	
Room size	58 m3	
Ventilation rate per hour	0,5	
body weight	65 kg	
Uptake fraction dermal	100 %	
Spray duration	180 sec	
Contact rate	100 mg/min	
Release duration	3 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 v4.2, ConsExpo v4.1, Dermal model: constant application rate, Uptake model: Uptake fraction	

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	Consumer - dermal, long-term - systemic
Exposure estimate	0,0001 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00002
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
	Exposure to spray/dust
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0072 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,002649
	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	PC31: Polishes and Wax Blends.	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
body weight	65 kg	
Contact rate	100 mg/min	
Release duration	3 min	
	Relevant for dermal exposure estimates	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant application rate  Consumer - dermal, short-term - local	
Exposure estimate	0,0002 mg/cm²/day	
Risk Characterization Ratio (RCR)	0,001646	
	The calculation is based on the external dose.	
Guidance to Downstream Users		
For scaling see: http://www.rivm.nl/en/l	nealthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC31: Polishes and Wax Blends. Other products of this category do either not exceed a concentration of 0.1% for this substance or exposure estimations are covered by the calculations made for this product category. In accordance to Article 14 (2b) of the REACh Regulation (EC) No 1907/2006, exposure estimation and risk characterisation does not need to be

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	performed if the concentration of the substance in a preparation is less than 0,1% weight by weight (w/w) and if the substance meets the criteria in Annex XIII to this Regulation.
Operational conditions	
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 0,75 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 0,3 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	365 uses per year
Room size	1 m3
Ventilation rate per hour	2
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,01 g Relevant for dermal exposure estimates
Release area	20 cm <sup>2</sup>
	Release area is constant
Release duration	0,3 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0002 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000246

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	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
	exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0001 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,000036
	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	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg
	Amount per use 0,01 g Relevant for dermal exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application
	Consumer - dermal, short-term - local
Exposure estimate	0,0001 mg/cm²/day
Risk Characterization Ratio (RCR)	0,000532
	The calculation is based on the external dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/h	ealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario		
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	

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Duration and Frequency of activity	365 uses per year	
body weight	65 kg	
Skin contact factor	80 %	
Uptake fraction dermal	100 %	
Leachable fraction	0,000005 %	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: migration, Uptake model: Uptake fraction	
	Consumer - dermal, long-term - systemic	
Exposure estimate	0,0006 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,000615	
	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	PC35: Washing and Cleaning Products (including solvent based products).	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
body weight	65 kg	
Skin contact factor	80 %	
Leachable fraction	0,000005 %	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: migration	
	Consumer - dermal, short-term - local	
Exposure estimate	0,0001 mg/cm <sup>2</sup> /day	
Risk Characterization Ratio (RCR)	0,00002	
	The calculation is based on the external dose.	
Guidance to Downstream Users		
For scaling see: http://www.rivm.nl/en/	For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent

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	based products).
Operational conditions	
•	citral
Concentration of the substance	Content: >= 0 % - <= 0,4799 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 3 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 2 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	260 uses per year
Room size	2,5 m3
Ventilation rate per hour	2
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 2,2 g Relevant for dermal exposure estimates
Release area	750 cm <sup>2</sup>
	Release area is constant
Release duration	2 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,1157 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,115726
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0006 mg/m³
Risk Characterization Ratio (RCR)	0,00022
	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	PC35: Washing and Cleaning Products (including solvent

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	based products).	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 0,4799 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
body weight	65 kg	
	Amount per use 2,2 g Relevant for dermal exposure estimates	
Exposure estimate and reference to	its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application	
	Consumer - dermal, short-term - local	
Exposure estimate	0,0491 mg/cm <sup>2</sup> /day	
Risk Characterization Ratio (RCR)	0,350831	
	The calculation is based on the external dose.	
Guidance to Downstream Users		
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp		

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,4799 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 3 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 2 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	120 uses per year
Room size	2,5 m3
Ventilation rate per hour	2
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %

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	Amount per use 2,2 g Relevant for dermal exposure
	estimates
Release area	750 cm <sup>2</sup>
	Release area is constant
Release duration	2 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant
Assessment method	application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0534 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,053412
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessmentmethod	exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0006 mg/m³
Risk Characterization Ratio (RCR)	0,00022
	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	
•	PC35: Washing and Cleaning Products (including solvent
Use descriptors covered	based products).
Operational conditions	
	citral
Concentration of the substance	Content: >= 0 % - <= 0,4799 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg
	Amount per use 2,2 g Relevant for dermal exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application
	Consumer - dermal, short-term - local
Exposure estimate	0,0491 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,350831
	The calculation is based on the external dose.
Guidance to Downstream Users	

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Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,4799 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 24 h Relevant for inhalative exposure estimates
Duration and Frequency of activity	365 uses per year
body weight	65 kg
Release duration	86400 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - constant rate
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0457 mg/m³
Risk Characterization Ratio (RCR)	0,016924
	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	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	•
Concentration of the substance	citral Content: >= 0 % - <= 0,4799 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 24 h Relevant for inhalative exposure estimates
Duration and Frequency of activity	365 uses per year

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body weight	65 kg
Release duration	43200 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	exposure to vapour - constant rate
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0392 mg/m³
Risk Characterization Ratio (RCR)	0,014506
	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	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 0,75 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 0,3 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	104 uses per year
Room size	1 m3
Ventilation rate per hour	0,5
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,01 g Relevant for dermal exposure estimates
Release area	20 cm <sup>2</sup>
	Release area is constant
Release duration	0,3 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	its source

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Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0001 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00007
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0001 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,000001
	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	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg
	Amount per use 0,01 g Relevant for dermal exposure estimates
Exposure estimate and reference to it	ts source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application
	Consumer - dermal, short-term - local
Exposure estimate	0,0001 mg/cm²/day
Risk Characterization Ratio (RCR)	0,000532
	The calculation is based on the external dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/h	ealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral

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	Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 240 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 20 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	104 uses per year
Room size	58 m3
Ventilation rate per hour	0,5
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 19 g Relevant for dermal exposure estimates
Release area	100000 cm <sup>2</sup>
	Release area increases over time
Release duration	20 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,1333 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,13326
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
	exposure to vapour - evaporation
Evposure estimate	Consumer - inhalation, long-term - systemic
Exposure estimate Risk Characterization Ratio (RCR)	0,009 mg/m³ 0,003346
NISK CHAIACIEHZAIIOH KAIIO (KCK)	The exposure calculation is based on the mean
	concentration on the day of exposure.
Guidance to Downstream Users	Concentration on the day of exposure.
	nealthanddisease/productsafety/ConsExpo.jsp
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Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral

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	Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance	4,6 Pa
during use	1,0 1 0
Process temperature	20 °C
body weight	65 kg
	Amount per use 19 g Relevant for dermal exposure
	estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant
Assessment method	application
	Consumer - dermal, short-term - local
Exposure estimate	0,016 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,114286
	The calculation is based on the external dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 0,75 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 0,3 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	4 uses per year
Room size	1 m3
Ventilation rate per hour	2
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,01 g Relevant for dermal exposure estimates
Release area	20 cm <sup>2</sup>

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	Release area is constant
Release duration	0,3 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0001 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000003
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0001 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,000001
	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/h	ealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg
	Amount per use 0,01 g Relevant for dermal exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application
	Consumer - dermal, short-term - local
Exposure estimate	0,0001 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,000532
	The calculation is based on the external dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/h	nealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent

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	based products).
Operational conditions	
	citral
Concentration of the substance	Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 25 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 20 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	4 uses per year
Room size	10 m3
Ventilation rate per hour	2
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 19 g Relevant for dermal exposure estimates
Release area	64000 cm <sup>2</sup>
	Release area increases over time
Release duration	20 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0051 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,005125
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0009 mg/m³
Risk Characterization Ratio (RCR)	0,000348
	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/l	nealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent

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	based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg
	Amount per use 19 g Relevant for dermal exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application
	Consumer - dermal, short-term - local
Exposure estimate	0,016 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,114286
_	The calculation is based on the external dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/h	nealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,4 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 60 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	365 uses per year
Room size	15 m3
Ventilation rate per hour	2,5
body weight	65 kg
Uptake fraction dermal	100 %
Spray duration	24,6 sec
Contact rate	46 mg/min

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Release duration	0,41 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 v4.2, ConsExpo v4.1, Dermal model: constant application rate, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0012 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,001161
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	Exposure to spray/dust
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0004 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,000153
	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	PC35: Washing and Cleaning Products (including solvent based products).	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 0,4 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
body weight	65 kg	
Contact rate	46 mg/min	
Release duration	0,41 min	
	Relevant for dermal exposure estimates	
Exposure estimate and reference to	its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant application rate	
	Consumer - dermal, short-term - local	
Exposure estimate	0,0001 mg/cm <sup>2</sup> /day	
Risk Characterization Ratio (RCR)	0,000259	
	The calculation is based on the external dose.	
Guidance to Downstream Users		
For scaling see: http://www.rivm.nl/en/l	nealthanddisease/productsafety/ConsExpo.jsp	

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Contributing exposure scenario	PC35: Washing and Cleaning Products (including solvent
Use descriptors covered	based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,4 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 60 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 10 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	365 uses per year
Room size	15 m3
Ventilation rate per hour	2,5
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,16 g Relevant for dermal exposure estimates
Release area	17100 cm <sup>2</sup>
	Release area is constant
Release duration	10 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0098 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,009846
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0146 mg/m³
Risk Characterization Ratio (RCR)	0,005424
	The exposure calculation is based on the mean concentration on the day of exposure.
Guidance to Downstream Users	, 1
For scaling see: http://www.rivm.nl/en.	/healthanddisease/productsafety/ConsExpo.jsp

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Contributing exposure scenario		
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 0,4 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
body weight	65 kg	
	Amount per use 0,16 g Relevant for dermal exposure estimates	
Exposure estimate and reference to	its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application	
	Consumer - dermal, short-term - local	
Exposure estimate	0,003 mg/cm <sup>2</sup> /day	
Risk Characterization Ratio (RCR)	0,021262	
	The calculation is based on the external dose.	
Guidance to Downstream Users		
For scaling see: http://www.rivm.nl/en/h	nealthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 25 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	52 uses per year
Room size	10 m3
Ventilation rate per hour	2
body weight	65 kg
Uptake fraction dermal	100 %

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Spray duration	90 sec
Contact rate	46 mg/min
Release duration	1,5 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 v4.2, ConsExpo v4.1, Dermal model: constant
Assessment method	application rate, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0002 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000242
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	Exposure to spray/dust
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0021 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,000792
	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/h	ealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario		
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).	
Operational conditions		
	citral	
Concentration of the substance	Content: >= 0 % - <= 0,16 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
body weight	65 kg	
Contact rate	46 mg/min	
Release duration	1,5 min	
	Relevant for dermal exposure estimates	
Exposure estimate and reference to	its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant	
Assessment method	application rate	
	Consumer - dermal, short-term - local	
Exposure estimate	0,0001 mg/cm²/day	
Risk Characterization Ratio (RCR)	0,000379	
	The calculation is based on the external dose.	
Guidance to Downstream Users		

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Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 25 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 20 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	52 uses per year
Room size	10 m3
Ventilation rate per hour	2
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,3 g Relevant for dermal exposure estimates
Release area	64000 cm <sup>2</sup>
	Release area is constant
Release duration	20 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0011 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,001052
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model: exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0413 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,015304
THOR OHARAGOTIZATION (NOIV)	The exposure calculation is based on the mean
	concentration on the day of exposure.
Guidance to Downstream Users	- concentration on the day of expectation

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Contributing exposure scenario		
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
body weight	65 kg	
	Amount per use 0,3 g Relevant for dermal exposure estimates	
Exposure estimate and reference to	its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application	
	Consumer - dermal, short-term - local	
Exposure estimate	0,0022 mg/cm²/day	
Risk Characterization Ratio (RCR)	0,015947	
	The calculation is based on the external dose.	
Guidance to Downstream Users		
For scaling see: http://www.rivm.nl/en/h	ealthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 60 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	26 uses per year
Room size	15 m3
Ventilation rate per hour	2,5
body weight	65 kg

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Uptake fraction dermal	100 %
Spray duration	30 sec
Contact rate	46 mg/min
Release duration	0,5 min
	Relevant for dermal exposure estimates
Risk Management Measures	
Consumer Measures	Ensure spraying away from persons.
Exposure estimate and reference to it	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant
Assessment method	application rate, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0001 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00004
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	Exposure to spray/dust
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0002 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,000075
	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/h	ealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario	
Llos descriptore severed	PC35: Washing and Cleaning Products (including solvent
Use descriptors covered	based products).
Operational conditions	
	citral
Concentration of the substance	Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg
Contact rate	46 mg/min
Release duration	0,5 min
	Relevant for dermal exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant
Assessment method	application rate
	Consumer - dermal, short-term - local
Exposure estimate	0,0001 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,000126

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1	The calculation is based on the external dose.
	Guidance to Downstream Users
	For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	26 uses per year
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,2 g Relevant for dermal exposure estimates
Exposure estimate and reference to	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0004 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000351
	The calculation is based on the internal chronic dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/h	ealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg

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	Amount per use 0,2 g Relevant for dermal exposure estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant
	application
	Consumer - dermal, short-term - local
Exposure estimate	0,0007 mg/cm²/day
Risk Characterization Ratio (RCR)	0,005316
	The calculation is based on the external dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 0,75 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 0,3 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	< 1 uses per year
Room size	1 m3
Ventilation rate per hour	0,5
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 0,01 g Relevant for dermal exposure estimates
Release area	20 cm <sup>2</sup>
	Release area is constant
Release duration	0,3 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0001 mg/kg bw/day

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Risk Characterization Ratio (RCR)	0,000001
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
	exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0001 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,000015
	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	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	1
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg
	Amount per use 0,01 g Relevant for dermal exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application
	Consumer - dermal, short-term - local
Exposure estimate	0,0001 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,000532
	The calculation is based on the external dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/l	nealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario		
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %	
Vapour pressure of the substance during use	4,6 Pa	

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Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 110 min
Duration and Frequency of activity	Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 110 min
Burdion and Frequency of donvity	Relevant for inhalative exposure estimates
Duration and Frequency of activity	< 1 uses per year
Room size	58 m3
Ventilation rate per hour	0,5
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %
	Amount per use 27 g Relevant for dermal exposure
	estimates
Release area	220000 cm <sup>2</sup>
	Release area increases over time
Release duration	110 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant
Assessment method	application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0009 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,00091
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0041 mg/m³
Risk Characterization Ratio (RCR)	0,00153
	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/h	ealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario		
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %	
Vapour pressure of the substance during use	4,6 Pa	

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Process temperature	20 °C	
body weight	65 kg	
	Amount per use 27 g Relevant for dermal exposure estimates	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant	
	application	
	Consumer - dermal, short-term - local	
Exposure estimate	0,0502 mg/cm²/day	
Risk Characterization Ratio (RCR)	0,358804	
	The calculation is based on the external dose.	
Guidance to Downstream Users		
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp		

Contributing exposure scenario	Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
Duration and Frequency of activity	Exposure duration: 22 min Relevant for inhalative exposure estimates	
Duration and Frequency of activity	< 1 uses per year	
Room size	58 m3	
Ventilation rate per hour	0,5	
body weight	65 kg	
Uptake fraction dermal	100 %	
Spray duration	1320 sec	
Contact rate	5 mg/min	
Release duration	22 min	
	Relevant for dermal exposure estimates	
Risk Management Measures		
Consumer Measures	Ensure spraying away from persons.	
Exposure estimate and reference to i		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant application rate, Uptake model: Uptake fraction	
	Consumer - dermal, long-term - systemic	

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Exposure estimate	0,0001 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,000004
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
	Exposure to spray/dust
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0085 mg/m³
Risk Characterization Ratio (RCR)	0,003148
	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	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg
Contact rate	5 mg/min
Release duration	22 min
	Relevant for dermal exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant application rate
	Consumer - dermal, short-term - local
Exposure estimate	0,0001 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,000604
	The calculation is based on the external dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/h	nealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %

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Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
Duration and Frequency of activity	14 uses per year	
Duration and Frequency of activity	14 uses per year	
body weight	8,69 kg	
Uptake fraction dermal	100 %	
Uptake fraction oral	100 %	
	Amount ingested 0,288 mg Relevant for oral exposure estimates	
Transfer coefficient	1,666667 cm <sup>2</sup> /s	
Dislodgeable amount	0,0003 g/cm <sup>2</sup>	
Contact time	3600 sec	
Rubbed surface	22 m²	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: rubbing off, Uptake model: Uptake fraction	
	Consumer - dermal, long-term - systemic	
Exposure estimate	0,0127 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,012712	
	The calculation is based on the internal chronic dose.	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Oral model: direct intake, Uptake model: Uptake fraction	
	Consumer - oral, long-term - systemic	
Exposure estimate	0,0001 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,000003	
	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	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C

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body weight	8,69 kg	
Transfer coefficient	1,666667 cm <sup>2</sup> /s	
Dislodgeable amount	0,0003 g/cm <sup>2</sup>	
Contact time	3600 sec	
Rubbed surface	22 m²	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: rubbing off	
	Consumer - dermal, short-term - local	
Exposure estimate	0,0006 mg/cm²/day	
Risk Characterization Ratio (RCR)	0,004286	
	The calculation is based on the external dose.	
Guidance to Downstream Users		
For scaling see: http://www.rivm.nl/en/healthanddisease/productsafety/ConsExpo.jsp		

Contributing exposure scenario			
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).		
Operational conditions	1		
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %		
Vapour pressure of the substance during use	4,6 Pa		
Process temperature	20 °C		
Duration and Frequency of activity	10 uses per year		
body weight	65 kg		
Uptake fraction dermal	100 %		
	Amount per use 0,07 g Relevant for dermal exposure estimates		
Exposure estimate and reference to	Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application, Uptake model: Uptake fraction		
	Consumer - dermal, long-term - systemic		
Exposure estimate	0,0001 mg/kg bw/day		
Risk Characterization Ratio (RCR)	0,000047		
The calculation is based on the internal chronic dose.			
Guidance to Downstream Users			
For scaling see: http://www.rivm.nl/en/h	nealthanddisease/productsafety/ConsExpo.jsp		

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent

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	based products).
Operational conditions	
	citral
Concentration of the substance	Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg
	Amount per use 0,07 g Relevant for dermal exposure
	estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant
Assessment method	application
	Consumer - dermal, short-term - local
Exposure estimate	0,0005 mg/cm²/day
Risk Characterization Ratio (RCR)	0,003721
	The calculation is based on the external dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/l	nealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
Duration and Frequency of activity	Exposure duration: 60 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	Application duration: 2 min Relevant for inhalative exposure estimates
Duration and Frequency of activity	365 uses per year
Room size	20 m3
Ventilation rate per hour	0,6
Temperature (Application)	21 °C
body weight	65 kg
Uptake fraction dermal	100 %

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	Amount per use 0,047 g Relevant for dermal exposure
	estimates
Release area	20000 cm <sup>2</sup>
	Release area increases over time
Release duration	2 min
	Relevant for inhalative exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant
Assessment method	application, Uptake model: Uptake fraction
	Consumer - dermal, long-term - systemic
Exposure estimate	0,0012 mg/kg bw/day
Risk Characterization Ratio (RCR)	0,001157
	The calculation is based on the internal chronic dose.
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:
Assessment method	exposure to vapour - evaporation
	Consumer - inhalation, long-term - systemic
Exposure estimate	0,0027 mg/m <sup>3</sup>
Risk Characterization Ratio (RCR)	0,001018
	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	PC35: Washing and Cleaning Products (including solvent based products).
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 0,16 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg
	Amount per use 0,047 g Relevant for dermal exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application
	Consumer - dermal, short-term - local
Exposure estimate	0,0003 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,002498
	The calculation is based on the external dose.
Guidance to Downstream Users	

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Contributing exposure scenario	
Use descriptors covered	PC35: Washing and Cleaning Products (including solvent based products).  Other products of this category do either not exceed a concentration of 0.1% for this substance or exposure estimations are covered by the calculations made for this product category. In accordance to Article 14 (2b) 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 0,1% weight by weight (w/w) and if the substance meets the criteria in Annex XIII to this Regulation.
Operational conditions	
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C

\* \* \* \* \* \* \* \* \* \* \* \* \* \* \* \*

## 9. Short title of exposure scenario

other consumer applications than fragrance, (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	900.000 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

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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 v4.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,436161	
	Risk from environmental exposure is driven by soil.	
	1,1	
Maximum amount of safe use	kg/d	
Risk from environmental exposure is driven by soil.		

Contributing exposure scenario		
Use descriptors covered	ERC8d: Widespread use of the control	f non-reactive processing aid rticle, outdoor)
Operational conditions		
Annual amount used in the EU	900.000 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	-	
		Municipal STP
Assumed sewage treatment plant flow	(m3/d)	2.000 m3/d
Exposure estimate and reference to		
Assessment method	EASY TRA v4.2, ECETOC TRA v3.0, Environment	
Risk Characterization Ratio (RCR)	0,436161	
	Risk from environmental ex	xposure is driven by soil.
Maximum amount of safe use	1,1 kg/d	
Risk from environmental exposure is of	Iriven by soil.	

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Use descriptors covered    PC8: Biocidal Products.	
Concentration of the substance citral Content: >= 0 % - <= 0,1 %  Vapour pressure of the substance 4,6 Pa	
Concentration of the substance  Content: >= 0 % - <= 0,1 %  Vapour pressure of the substance  4,6 Pa	
Process temperature 20 °C	
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 %	
Uptake fraction oral	
Amount per use 6 g Relevant for dermal exposure estimates	
Ingestion rate 0,00133 mg/min	
Exposure estimate and reference to its source	
Assessment method EASY TRA v4.2, ConsExpo v4.1, Dermal model: ins application, Uptake model: Uptake fraction	tant
Consumer - dermal, long-term - systemic	
Exposure estimate 0,0137 mg/kg bw/day	
Risk Characterization Ratio (RCR) 0,013656	
Assessment method  The calculation is based on the internal chronic dose  EASY TRA v4.2, ConsExpo v4.1, Oral model: constarate, Uptake model: Uptake fraction  Consumer - oral, long-term - systemic	
Exposure estimate 0,0001 mg/kg bw/day	
Risk Characterization Ratio (RCR) 0,000001	
The calculation is based on the internal chronic dose	<b>)</b> .
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	citral

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	Content: >= 0 % - <= 0,1 %
77	100
Vapour pressure of the substance	4,6 Pa
during use	
Process temperature	20 °C
body weight	65 kg
	Amount per use 6 g Relevant for dermal exposure
	estimates
Exposure estimate and reference to its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant
Assessment method	application
	Consumer - dermal, short-term - local
Exposure estimate	0,0003 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,002449
	The calculation is based on the external 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	citral Content: >= 0 % - <= 0,1 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
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 %	
Uptake fraction oral	100 %	
	Amount per use 1,5 g Relevant for dermal exposure estimates	
Ingestion rate	0,00083 mg/min	
Exposure estimate and reference to		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant	

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	application, Uptake model: Uptake fraction	
	Consumer - dermal, long-term - systemic	
Exposure estimate	0,0255 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,025537	
	The calculation is based on the internal chronic dose.	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Oral model: constant	
	rate, Uptake model: Uptake fraction	
	Consumer - oral, long-term - systemic	
Exposure estimate	0,0001 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,000004	
	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	citral Content: >= 0 % - <= 0,1 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	8,69 kg
	Amount per use 1,5 g Relevant for dermal exposure estimates
Exposure estimate and reference to	its source
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: instant application
	Consumer - dermal, short-term - local
Exposure estimate	0,0003 mg/cm <sup>2</sup> /day
Risk Characterization Ratio (RCR)	0,002232
-	The calculation is based on the external dose.
Guidance to Downstream Users	
For scaling see: http://www.rivm.nl/en/l	nealthanddisease/productsafety/ConsExpo.jsp

Contributing exposure scenario		
Use descriptors covered	PC8: Biocidal Products.	
Operational conditions		
Concentration of the substance	citral Content: >= 0 % - <= 5 %	
Vapour pressure of the substance during use	4,6 Pa	

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Process temperature	20 °C	
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 %	
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 v4.2, ConsExpo v4.1, Dermal model: constant	
Assessment method	application rate, Uptake model: Uptake fraction	
	Consumer - dermal, long-term - systemic	
Exposure estimate	0,0168 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,016837	
	The calculation is based on the internal chronic dose.	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Inhalation model:	
Assessment method	Exposure to spray/dust	
	Consumer - inhalation, long-term - systemic	
Exposure estimate	0,0203 mg/m³	
Risk Characterization Ratio (RCR)	0,007517	
	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/h	ealthanddisease/productsafety/ConsExpo.jsp	

Contributing exposure scenario	
Use descriptors covered	PC8: Biocidal Products.
Operational conditions	
Concentration of the substance	citral Content: >= 0 % - <= 5 %
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C
body weight	65 kg

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Contact rate	269 mg/min	
Release duration	0,33 min	
	Relevant for dermal exposure estimates	
Exposure estimate and reference to its source		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: constant	
	application rate	
	Consumer - dermal, short-term - local	
Exposure estimate	0,0003 mg/cm <sup>2</sup> /day	
Risk Characterization Ratio (RCR)	0,001812	
	The calculation is based on the external 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	citral Content: >= 0 % - <= 5 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
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	
Uptake fraction dermal	100 %	
Uptake fraction oral	100 %	
Transfer coefficient	1,666667 cm <sup>2</sup> /s	
Dislodgeable amount	0,000082 g/cm <sup>2</sup>	
Contact time	3600 sec	
Rubbed surface	22 m²	
Ingestion rate	0,041 mg/min	
Exposure estimate and reference to		
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: rubbing off, Uptake model: Uptake fraction	
	Consumer - dermal, long-term - systemic	
Exposure estimate	0,698 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,698015	
	The calculation is based on the internal chronic dose.	

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Assessment method	EASY TRA v4.2, ConsExpo v4.1, Oral model: constant rate, Uptake model: Uptake fraction	
	Consumer - oral, long-term - systemic	
Exposure estimate	0,0035 mg/kg bw/day	
Risk Characterization Ratio (RCR)	0,005817	
	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	citral Content: >= 0 % - <= 5 %	
Vapour pressure of the substance during use	4,6 Pa	
Process temperature	20 °C	
body weight	8,69 kg	
Transfer coefficient	1,666667 cm <sup>2</sup> /s	
Dislodgeable amount	0,000082 g/cm <sup>2</sup>	
Contact time	3600 sec	
Rubbed surface	22 m²	
Exposure estimate and reference to	its source	
Assessment method	EASY TRA v4.2, ConsExpo v4.1, Dermal model: rubbing off	
	Consumer - dermal, short-term - local	
Exposure estimate	0,0051 mg/cm <sup>2</sup> /day	
Risk Characterization Ratio (RCR)	0,036607	
	The calculation is based on the external 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 0.1% for this substance or exposure estimations are covered by the calculations made for this product category. In accordance to Article 14 (2b) 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 0,1% weight by weight (w/w) and if the substance meets the criteria in Annex XIII to this Regulation.

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Operational conditions	
Vapour pressure of the substance during use	4,6 Pa
Process temperature	20 °C