

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

1.1. Product identifier

Product form	: Substance
Substance name	: Sweet orange essential oil, organic, Mexico
EC-No.	: 232-433-8
CAS-No.	: 8028-48-6
Product code	: 10326_MEX
Type of product	: Essential oil
Product group	: Raw material

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

1.2.1. Relevant identified uses

Main use category : Industrial use

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

SIRIUS SAS
 57 Chemin de la Métairie Haute
 81580 CAMBUNET SUR LE SOR
 France
 T + 33 (0)5-32-09-11-72
contact@sirius-bio.com

1.4. Emergency telephone number

No additional information available

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Flammable liquids, Category 3	H226
Skin corrosion/irritation, Category 2	H315
Skin sensitisation, Category 1	H317
Hazardous to the aquatic environment – Acute Hazard, Category 1	H400
Hazardous to the aquatic environment – Chronic Hazard, Category 1	H410
Full text of H- and EUH-statements: see section 16	

Adverse physicochemical, human health and environmental effects

Flammable liquid and vapour. Causes skin irritation. May cause an allergic skin reaction. Very toxic to aquatic life with long lasting effects.

2.2. Label elements

Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS02

GHS07

GHS09

Signal word (CLP) :

Warning

Hazard statements (CLP) :

H226 - Flammable liquid and vapour.
 H315 - Causes skin irritation.
 H317 - May cause an allergic skin reaction.
 H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (CLP) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.
 P264 - Wash hands, forearms and face thoroughly after handling.
 P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
 P321 - Specific treatment (see supplemental first aid instruction on this label).
 P391 - Collect spillage.

2.3. Other hazards

Contains no PBT/vPvB substances $\geq 0.1\%$ assessed in accordance with REACH Annex XIII

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SECTION 3: Composition/information on ingredients

3.1. Substances

Name : Sweet orange essential oil, organic, Mexico
CAS-No. : 8028-48-6
EC-No. : 232-433-8

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Limonene	CAS-No.: 138-86-3 EC-No.: 227-813-5 EC Index-No.: 601-096-00-2 REACH-no: 01-2119529223-47	≥ 90	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
myrcene beta	CAS-No.: 123-35-3 EC-No.: 204-622-5	1 – 5	Asp. Tox. 1, H304 Eye Irrit. 2, H319 Aquatic Acute 1, H400 Aquatic Chronic 2, H411 Flam. Liq. 3, H226 Skin Irrit. 2, H315
Beta sabinene	CAS-No.: 3387-41-5 EC-No.: 222-212-4	0.1 – 5	Acute Tox. 4 (Oral), H302
Alpha pinene	CAS-No.: 80-56-8 EC-No.: 201-291-9 REACH-no: 01-2119519223-49	0.1 – 1	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304
Decanal	CAS-No.: 112-31-2 EC-No.: 203-957-4	0.1 – 1	Eye Irrit. 2, H319 Aquatic Chronic 3, H412
Linalool *	CAS-No.: 78-70-6 EC-No.: 201-134-4 EC Index-No.: 603-235-00-2 REACH-no: 01-2119474016-42	0.1 – 1	Skin Sens. 1B, H317
Beta bisabolene	CAS-No.: 495-61-4	< 1	Acute Tox. 4 (Inhalation:dust,mist), H332
Octanal	CAS-No.: 124-13-0 EC-No.: 204-683-8	0.1 – 1	Eye Irrit. 2, H319 Aquatic Chronic 2, H411 Flam. Liq. 3, H226 Skin Irrit. 2, H315
1,8 Cineole	CAS-No.: 470-82-6 EC-No.: 207-431-5	< 1	Flam. Liq. 3, H226 Skin Sens. 1B, H317 Eye Irrit. 2, H319
Beta Phellandrene	CAS-No.: 555-10-2 EC-No.: 209-081-9	0.1 – 1	Asp. Tox. 1, H304 Flam. Liq. 3, H226
Neryl acetate	CAS-No.: 141-12-8 EC-No.: 205-459-2	< 1	Skin Sens. 1B, H317
Alpha Phellandrene	CAS-No.: 99-83-2 EC-No.: 202-792-5	< 1	Flam. Liq. 3, H226 Asp. Tox. 1, H304 Aquatic Chronic 1, H410 Aquatic Acute 1, H400
Valencene	CAS-No.: 4630-07-3 EC-No.: 225-047-6	< 1	Asp. Tox. 1, H304
Alpha terpinene	CAS-No.: 99-86-5 EC-No.: 202-795-1	< 1	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Skin Sens. 1, H317 Asp. Tox. 1, H304 Aquatic Chronic 2, H411

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Citral (neral + geranial) *	CAS-No.: 5392-40-5 EC-No.: 226-394-6 EC Index-No.: 605-019-00-3 REACH-no: 01-2119462829-23	< 1	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1, H317
Delta 3-carene	CAS-No.: 13466-78-9 EC-No.: 236-719-3	< 1	Skin Sens. 1, H317 Skin Irrit. 2, H315 Flam. Liq. 3, H226 Asp. Tox. 1, H304 Acute Tox. 4 (Inhalation), H332 Aquatic Chronic 2, H411
Geranyl acetate	CAS-No.: 105-87-3 EC-No.: 203-341-5	< 1	Skin Sens. 1B, H317 Skin Irrit. 2, H315 Aquatic Chronic 3, H412
Beta Caryophyllene	CAS-No.: 87-44-5 EC-No.: 201-746-1	< 1	Skin Sens. 1B, H317 Asp. Tox. 1, H304
Paracymene	CAS-No.: 99-87-6 EC-No.: 202-796-7 EC Index-No.: 601-094-00-1	< 1	Repr. 2, H361 Flam. Liq. 3, H226 Asp. Tox. 1, H304 Aquatic Chronic 2, H411 Acute Tox. 3 (Inhalation), H331
Alpha terpineol	CAS-No.: 98-55-5 EC-No.: 202-680-6	< 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319
Ethanol	CAS-No.: 64-17-5 EC-No.: 200-578-6 EC Index-No.: 603-002-00-5	< 1	Eye Irrit. 2, H319 Flam. Liq. 2, H225
Geranial	CAS-No.: 141-27-5 EC-No.: 205-476-5	< 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317
Beta Pinene	CAS-No.: 127-91-3 EC-No.: 204-872-5	< 1	Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317
Acetone	CAS-No.: 67-64-1 EC-No.: 200-662-2 EC Index-No.: 606-001-00-8	< 1	Flam. Liq. 2, H225 Eye Irrit. 2, H319 STOT SE 3, H336
Citronellal	CAS-No.: 106-23-0 EC-No.: 203-376-6	< 1	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1B, H317
Caprylyl Alcohol	CAS-No.: 111-87-5 EC-No.: 203-917-6	< 1	Aquatic Chronic 3, H412
Gamma terpinene	CAS-No.: 99-85-4 EC-No.: 202-794-6	< 1	Repr. 2, H361 Flam. Liq. 3, H226 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
Neral	CAS-No.: 106-26-3 EC-No.: 203-379-2	< 1	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1B, H317
Nerol	CAS-No.: 106-25-2 EC-No.: 203-378-7 REACH-no: 01-2119983244-33	< 1	Skin Irrit. 2, H315 Skin Sens. 1B, H317 Eye Irrit. 2, H319
Nonanal	CAS-No.: 124-19-6 EC-No.: 204-688-5	< 1	Aquatic Chronic 3, H412
Terpinolene	CAS-No.: 586-62-9 EC-No.: 209-578-0	< 1	Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Skin Sens. 1B, H317

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Camphene	CAS-No.: 79-92-5 EC-No.: 201-234-8	< 0.1	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Alpha bisabolol	CAS-No.: 515-69-5 EC-No.: 208-205-9	< 0.1	Acute Tox. 3 (Dermal), H311 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Beta Farnesene (E)	CAS-No.: 18794-84-8 EC-No.: 242-582-0	< 0.1	Asp. Tox. 1, H304
Terpinen-4-ol	CAS-No.: 562-74-3 EC-No.: 209-235-5	< 0.1	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319
Benzoic acid	CAS-No.: 65-85-0 EC-No.: 200-618-2 EC Index-No.: 607-705-00-8	< 0.1	Eye Dam. 1, H318 Skin Irrit. 2, H315 STOT RE 1, H372
Beta Ocimene	CAS-No.: 13877-91-3 EC-No.: 237-641-2	< 0.1	Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 2, H411 Flam. Liq. 3, H226 Skin Irrit. 2, H315
Citronellyl acetate	CAS-No.: 150-84-5 EC-No.: 205-775-0	< 0.1	Aquatic Chronic 2, H411 Skin Irrit. 2, H315
Geraniol *	CAS-No.: 106-24-1 EC-No.: 203-377-1 EC Index-No.: 603-241-00-5 REACH-no: 01-2119552430-49	< 0.1	Skin Sens. 1, H317 Aquatic Chronic 3, H412
Carvone	CAS-No.: 2244-16-8 EC-No.: 218-827-2 EC Index-No.: 606-148-00-8	< 0.1	Skin Sens. 1B, H317
Citronellol *	CAS-No.: 106-22-9 EC-No.: 203-375-0 REACH-no: 01-2119453995-23	< 0.1	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1B, H317
Eugenol	CAS-No.: 97-53-0 EC-No.: 202-589-1	< 0.1	Eye Irrit. 2, H319 Skin Sens. 1B, H317
Methyl stearate	CAS-No.: 112-61-8 EC-No.: 203-990-4	< 0.1	Aquatic Acute 1, H400 (M=100) Aquatic Chronic 1, H410 (M=100)
Linalool acetate	CAS-No.: 115-95-7 EC-No.: 204-116-4	< 0.1	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1B, H317
Capric acid	CAS-No.: 334-48-5 EC-No.: 206-376-4 EC Index-No.: 607-709-00-X	< 0.1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Chronic 3, H412
Caprylic acid	CAS-No.: 124-07-2 EC-No.: 204-677-5 EC Index-No.: 607-708-00-4	< 0.1	Skin Corr. 1C, H314 Aquatic Chronic 3, H412
Beta caryophyllene oxide	CAS-No.: 1139-30-6 EC-No.: 214-519-7	< 0.1	Aquatic Chronic 2, H411
Decyl Alcohol	CAS-No.: 112-30-1 EC-No.: 203-956-9	< 0.1	Eye Irrit. 2, H319 Aquatic Chronic 3, H412
Perillaldehyde	CAS-No.: 2111-75-3 EC-No.: 218-302-8	< 0.1	Skin Sens. 1B, H317
Terpenyl acetate	CAS-No.: 80-26-2 EC-No.: 201-265-7	< 0.1	Aquatic Chronic 2, H411
p-Mentha-1,8-dien-7-ol	CAS-No.: 536-59-4 EC-No.: 208-639-9	< 0.1	Skin Irrit. 2, H315 Eye Irrit. 2, H319

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Hexanal	CAS-No.: 66-25-1 EC-No.: 200-624-5	< 0.1	Flam. Liq. 3, H226 Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1B, H317
Methyl palmitate	CAS-No.: 112-39-0 EC-No.: 203-966-3	< 0.1	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
Thymol	CAS-No.: 89-83-8 EC-No.: 201-944-8 EC Index-No.: 604-032-00-1	< 0.1	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Aquatic Chronic 2, H411
Isopulegol	CAS-No.: 89-79-2 EC-No.: 201-940-6	< 0.1	Acute Tox. 4 (Oral), H302 Eye Irrit. 2, H319 Skin Irrit. 2, H315
Eugenyl acetate	CAS-No.: 93-28-7 EC-No.: 202-235-6	< 0.1	Acute Tox. 4 (Oral), H302

Full text of H- and EUH-statements: see section 16

3.2. Mixtures

Not established.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Rinse skin with water/shower. Take off immediately all contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

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

Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.
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4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.
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5.2. Special hazards arising from the substance or mixture

Fire hazard	: Flammable liquid and vapour.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Advice for firefighters

Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.
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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures	: Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray.
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6.1.2. For emergency responders

Protective equipment	: Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".
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6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment	: Collect spillage.
Methods for cleaning up	: Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information	: Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

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SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray.
Hygiene measures	: Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures	: Ground/bond container and receiving equipment.
Storage conditions	: Store in a well-ventilated place. Keep cool. Keep container tightly closed.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

8.1.1 National occupational exposure and biological limit values

Acetone (67-64-1)	
France - Occupational Exposure Limits	
Local name	Acétone
VME (OEL TWA)	1210 mg/m ³
VME (OEL TWA) [ppm]	500 ppm
VLE (OEL C/STEL)	2420 mg/m ³
VLE (OEL C/STEL) [ppm]	1000 ppm
Remark	Valeurs réglementaires contraignantes
Regulatory reference	Article R4412-149 du Code du travail (réf.: INRS ED 984, 2016; Décret n° 2019-1487; Décret n° 2020-1546; Décret n° 2021-434; Décret n° 2021-1849)
Ethanol (64-17-5)	
France - Occupational Exposure Limits	
Local name	Alcool éthylique
VME (OEL TWA)	1900 mg/m ³
VME (OEL TWA) [ppm]	1000 ppm
VLE (OEL C/STEL)	9500 mg/m ³
VLE (OEL C/STEL) [ppm]	5000 ppm
Remark	Valeurs recommandées/admises
Regulatory reference	Circulaire du Ministère du travail (réf.: INRS ED 984, 2016)

8.1.2. Recommended monitoring procedures

No additional information available

8.1.3. Air contaminants formed

No additional information available

8.1.4. DNEL and PNEC

No additional information available

8.1.5. Control banding

No additional information available

8.2. Exposure controls

8.2.1. Appropriate engineering controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

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8.2.2. Personal protection equipment

Personal protective equipment symbol(s):



8.2.2.1. Eye and face protection

Eye protection:

Safety glasses

8.2.2.2. Skin protection

Skin and body protection:

Wear suitable protective clothing

Hand protection:

Protective gloves

8.2.2.3. Respiratory protection

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

8.2.2.4. Thermal hazards

No additional information available

8.2.3. Environmental exposure controls

Environmental exposure controls:

Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Yellow. orange.
Odour	: zest. Fruity. Sweet. sweet odour. orange.
Odour threshold	: Not available
Melting point	: Not applicable
Freezing point	: Not available
Boiling point	: 176 °C Source: sigma-aldrich
Flammability	: Flammable liquid and vapour.
Explosive limits	: Not available
Lower explosion limit	: Not available
Upper explosion limit	: Not available
Flash point	: 43 °C
Auto-ignition temperature	: Not available
Decomposition temperature	: Not available
pH	: Not available
Viscosity, kinematic	: Not available
Solubility	: Not available
Partition coefficient n-octanol/water (Log Kow)	: Not available
Vapour pressure	: Not available
Vapour pressure at 50 °C	: Not available
Density	: Not available
Relative density	: 0.84 – 0.85
Relative vapour density at 20 °C	: Not available
Particle characteristics	: Not applicable

9.2. Other information

9.2.1. Information with regard to physical hazard classes

No additional information available

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9.2.2. Other safety characteristics

Refractive index : 1.47 – 1.476

SECTION 10: Stability and reactivity

10.1. Reactivity

Flammable liquid and vapour.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

10.5. Incompatible materials

No additional information available

10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

1,8 Cineole (470-82-6)	
LD50 oral	2480 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal))
Linalool acetate (115-95-7)	
LD50 oral rat	> 9000 mg/kg bodyweight Animal: rat
Alpha bisabolol (515-69-5)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method), Guideline: EU Method B.1 tris (Acute Oral Toxicity - Acute Toxic Class Method), Guideline: EPA OPPTS 870.1100 (Acute Oral Toxicity)
LD50 dermal rat	> 750 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Remarks on results: other:
Acetone (67-64-1)	
LD50 oral rat	5800 mg/kg bodyweight Animal: rat, Animal sex: female
LC50 Inhalation - Rat	76 mg/l air Animal: rat, Animal sex: female, 95% CL: 65,2 - 88,4
Alpha pinene (80-56-8)	
LD50 oral	3700 mg/kg bodyweight
LD50 dermal	> 5000 mg/kg bodyweight
Alpha terpinene (99-86-5)	
LD50 oral	1680 mg/kg bodyweight
Alpha terpineol (98-55-5)	
LD50 oral rat	4300 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 2900 - 5700
LD50 oral	4300 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
LD50 dermal rabbit	> 3000 mg/kg OECD 402
Beta bisabolene (495-61-4)	
LC50 Inhalation - Rat (Dust/Mist)	1.5 mg/l/4h

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Benzoic acid (65-85-0)	
LD50 oral	2565 mg/kg bodyweight
Beta Ocimene (13877-91-3)	
LD50 oral	5000 mg/kg bodyweight
Beta Pinene (127-91-3)	
LD50 oral rat	300 – 2000 mg/kg OCDE 423
LD50 dermal rat	> 2000 mg/kg
Camphene (79-92-5)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: other:rat and mouse
LD50 oral	> 5000 mg/kg bodyweight Animal: mouse
LD50 dermal rat	> 2500 mg/kg bodyweight Animal:
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit
LC50 Inhalation - Rat	> 25 mg/l air Animal:
Carvone (2244-16-8)	
LD50 oral	2500 mg/kg bodyweight
LD50 dermal	3800 mg/kg bodyweight
Citral (neral + geranial) * (5392-40-5)	
LD50 oral rat	≈ 6800 mg/kg bodyweight Animal: rat
LD50 oral	4960 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat
LD50 dermal	2250 mg/kg bodyweight
Citronellal (106-23-0)	
LD50 oral	2500 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat
LD50 dermal rabbit	2500 – 5000 mg/kg bodyweight Animal: rabbit
LD50 dermal	2500 mg/kg bodyweight
Citronellol * (106-22-9)	
LD50 oral	3450 mg/kg bodyweight
LD50 dermal	2650 mg/kg bodyweight
Delta 3-carene (13466-78-9)	
LD50 oral	4800 mg/kg bodyweight
LC50 Inhalation - Rat (Dust/Mist)	1.5 mg/l/4h
Ethanol (64-17-5)	
LD50 oral rat	15010 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 14450 - 15560
LD50 oral	8300 mg/kg bodyweight Animal: mouse
Caprylyl Alcohol (111-87-5)	
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rabbit	2000 – 4000 mg/kg bodyweight Animal: rabbit
LD50 dermal	2500 mg/kg bodyweight
Decyl Alcohol (112-30-1)	
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: EPA OPPTS 870.1100 (Acute Oral Toxicity)

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Decyl Alcohol (112-30-1)	
LD50 dermal rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: EPA OPPTS 870.1200 (Acute Dermal Toxicity)
LC50 Inhalation - Rat	> 2.05 mg/l air Animal: rat, Guideline: EPA OPPTS 870.1300 (Acute inhalation toxicity)
Linalool * (78-70-6)	
LD50 oral rat	2790 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 2440 - 3180
LD50 oral	2790 mg/kg bodyweight
LD50 dermal rabbit	5610 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), 95% CL: 3578 - 8374
LD50 dermal	5610 mg/kg bodyweight
Eugenol (97-53-0)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)
LD50 oral	1500 – 1500 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method)
Eugenyl acetate (93-28-7)	
LD50 oral	1670 mg/kg bodyweight
Gamma terpinene (99-85-4)	
LD50 oral	3650 mg/kg bodyweight
Geranial (141-27-5)	
LD50 dermal	2250 mg/kg bodyweight
Geraniol * (106-24-1)	
LD50 oral rat	3600 mg/kg bodyweight Animal: rat, 95% CL: 2840 - 4570
LD50 oral	2100 mg/kg bodyweight
LD50 dermal rabbit	> 5000 mg/kg bodyweight Animal: rabbit
LD50 dermal	> 5000 mg/kg bodyweight
Limonene (138-86-3)	
LD50 oral	4400 mg/kg bodyweight
LD50 dermal	> 2000 mg/kg bodyweight
Methyl palmitate (112-39-0)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LC50 Inhalation - Rat	> 5 mg/l air Animal: rat, Guideline: OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class Method)
Neral (106-26-3)	
LD50 dermal	2250 mg/kg bodyweight
Nerol (106-25-2)	
LD50 oral	4500 mg/kg bodyweight
LD50 dermal	> 5000 mg/kg bodyweight
Octanal (124-13-0)	
LD50 oral rat	4617 mg/kg bodyweight Animal: rat, Animal sex: male
LD50 dermal rabbit	5207 mg/kg bodyweight Animal: rabbit, Animal sex: male
LC50 Inhalation - Rat	> 0.83 mg/l air Animal: rat, Animal sex: male

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Paracymene (99-87-6)	
LD50 oral	4750 mg/kg bodyweight
LC50 Inhalation - Rat (Vapours)	9.7 mg/l/4h
Perillaldehyde (2111-75-3)	
LD50 oral	2500 mg/kg bodyweight
Terpinolene (586-62-9)	
LD50 oral	3775 mg/kg bodyweight
LD50 dermal rabbit	> 4300 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
Thymol (89-83-8)	
LD50 oral	980 mg/kg bodyweight
Isopulegol (89-79-2)	
LD50 oral	940 mg/kg bodyweight
p-Mentha-1,8-dien-7-ol (536-59-4)	
LD50 oral	2100 mg/kg bodyweight
Methyl stearate (112-61-8)	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LC50 Inhalation - Rat	> 5 mg/l air Animal: rat, Guideline: OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class Method)
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Citral (neral + geranial) * (5392-40-5)	
NOAEL (chronic, oral, animal/male, 2 years)	60 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies), Remarks on results: other:Effect type: toxicity (migrated information)
Citronellal (106-23-0)	
NOAEL (chronic, oral, animal/male, 2 years)	60 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies), Remarks on results: other:Effect type: toxicity (migrated information)
Geraniol * (106-24-1)	
NOAEL (chronic, oral, animal/male, 2 years)	60 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies), Remarks on results: other:
Reproductive toxicity	: Not classified
Acetone (67-64-1)	
LOAEL (animal/female, F0/P)	11298 mg/kg bodyweight Animal: mouse, Animal sex: female
NOAEL (animal/male, F0/P)	900 mg/kg bodyweight Animal: rat, Animal sex: male, Remarks on results: other:Generation not specified (migrated information)
Alpha terpineol (98-55-5)	
NOAEL (animal/male, F0/P)	≥ 750 mg/kg OECD 422
NOAEL (animal/female, F0/P)	≥ 750 mg/kg OECD 422
Caprylyl Alcohol (111-87-5)	
NOAEL (animal/male, F0/P)	1127 mg/kg bodyweight Animal: rat, Animal sex: male

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Caprylyl Alcohol (111-87-5)	
NOAEL (animal/female, F0/P)	1243 mg/kg bodyweight Animal: rat, Animal sex: female
Decyl Alcohol (112-30-1)	
NOAEL (animal/male, F0/P)	1127 mg/kg bodyweight Animal: rat, Animal sex: male
NOAEL (animal/female, F0/P)	1243 mg/kg bodyweight Animal: rat, Animal sex: female
Nonanal (124-19-6)	
LOAEL (animal/female, F0/P)	1500 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: other:Unclear; makes reference to FDA (1987)
Octanal (124-13-0)	
NOAEL (animal/female, F0/P)	300 mg/kg bodyweight Animal: rat, Animal sex: female
NOAEL (animal/female, F1)	300 mg/kg bodyweight Animal: rat, Animal sex: female
Terpinolene (586-62-9)	
NOAEL (animal/male, F0/P)	294.6 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
NOAEL (animal/female, F0/P)	161.5 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
STOT-single exposure	: Not classified
Acetone (67-64-1)	
STOT-single exposure	May cause drowsiness or dizziness.
STOT-repeated exposure	: Not classified
1,8 Cineole (470-82-6)	
NOAEL (oral, rat, 90 days)	600 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: other:japanese Ministry of Economy Trade and Industry Guideline for 28 day repeat oral dose toxicity study., Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents), Guideline: EPA OPPTS 870.3150 (90-Day Oral Toxicity in Nonrodents)
Linalool acetate (115-95-7)	
LOAEL (dermal, rat/rabbit, 90 days)	Animal: rat, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)
Alpha bisabolol (515-69-5)	
LOAEL (dermal, rat/rabbit, 90 days)	1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)
NOAEL (dermal, rat/rabbit, 90 days)	200 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
Alpha terpineol (98-55-5)	
NOAEL (oral, rat, 90 days)	≥ 314 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
Benzoic acid (65-85-0)	
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.
Citral (neral + geranial) * (5392-40-5)	
LOAEC (inhalation, rat, gas, 90 days)	68 ppm Animal: rat, Animal sex: female
NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
NOAEC (inhalation, rat, gas, 90 days)	34 ppm Animal: rat, Animal sex: female
NOAEL (subchronic, oral, animal/male, 90 days)	60 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

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Citronellal (106-23-0)	
LOAEC (inhalation, rat, gas, 90 days)	68 ppm Animal: rat, Animal sex: female
NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
NOAEC (inhalation, rat, gas, 90 days)	34 ppm Animal: rat, Animal sex: female
NOAEL (subchronic, oral, animal/male, 90 days)	60 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)
Citronellol * (106-22-9)	
NOAEL (oral, rat, 90 days)	2000 mg/kg bodyweight Animal: rat, Guideline: other:Specifications for the Conduct of Studies to Evaluate the Toxic and Carcinogenic Potential of Chemical, Biological, and Physical Agents in Laboratory Animals for the National Toxicology Program (NTP)
Ethanol (64-17-5)	
NOAEL (subchronic, oral, animal/male, 90 days)	< 9700 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: EPA OPPTS 870.3100 (90-Day Oral Toxicity in Rodents)
NOAEL (subchronic, oral, animal/female, 90 days)	> 9400 mg/kg bodyweight Animal: mouse, Animal sex: female, Guideline: EPA OPPTS 870.3100 (90-Day Oral Toxicity in Rodents)
Decyl Alcohol (112-30-1)	
LOAEL (dermal, rat/rabbit, 90 days)	100 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)
NOAEL (dermal, rat/rabbit, 90 days)	1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)
Linalool * (78-70-6)	
LOAEL (dermal, rat/rabbit, 90 days)	Animal: rat, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)
Eugenol (97-53-0)	
NOAEL (subchronic, oral, animal/male, 90 days)	≥ 900 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: other:OECD Guideline 451 (Carcinogenicity Studies)
NOAEL (subchronic, oral, animal/female, 90 days)	450 mg/kg bodyweight Animal: mouse, Animal sex: female, Guideline: other:OECD Guideline 451 (Carcinogenicity Studies)
Geraniol * (106-24-1)	
NOAEL (dermal, rat/rabbit, 90 days)	300 mg/kg bodyweight Animal: rat, Guideline: other:, Guideline: other:
Methyl stearate (112-61-8)	
NOAEL (oral, rat, 90 days)	1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
Aspiration hazard	: Not classified
Caprylyl Alcohol (111-87-5)	
Viscosity, kinematic	5.584 mm ² /s Temp.: '40°C' Parameter: 'kinematic viscosity (in mm ² /s)'
Linalool * (78-70-6)	
Viscosity, kinematic	5.192 mm ² /s
Methyl palmitate (112-39-0)	
Viscosity, kinematic	4.4 mm ² /s Temp.: '40°C' Parameter: 'kinematic viscosity (in mm ² /s)'

11.2. Information on other hazards

No additional information available

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: Very toxic to aquatic life with long lasting effects.
Hazardous to the aquatic environment, short-term (acute)	: Very toxic to aquatic life.
Hazardous to the aquatic environment, long-term (chronic)	: Very toxic to aquatic life with long lasting effects.

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Not rapidly degradable

1,8 Cineole (470-82-6)	
LC50 - Fish [1]	57 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 74 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	> 74 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
Linalool acetate (115-95-7)	
LC50 - Fish [1]	11 mg/l Test organisms (species): Cyprinus carpio
EC50 - Crustacea [1]	15 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	62 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
Alpha bisabolol (515-69-5)	
LC50 - Fish [1]	≈ 6.81 mg/l Test organisms (species): Leuciscus idus
EC50 - Crustacea [1]	1.3 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	5.72 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	0.243 mg/l Source: Ecological Structure Activity Relationships
Acetone (67-64-1)	
LOEC (chronic)	> 79 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	≥ 79 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
Alpha pinene (80-56-8)	
LC50 - Fish [1]	0.28 mg/l
EC50 - Other aquatic organisms [1]	1.44 mg/l waterflea
Alpha terpineol (98-55-5)	
LC50 - Fish [1]	70 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	73 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	≈ 68 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	≈ 17 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
Camphene (79-92-5)	
LC50 - Fish [1]	0.72 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	0.72 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	1.75 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
Citral (neral + geranial) * (5392-40-5)	
LC50 - Fish [1]	6.78 mg/l Test organisms (species): Leuciscus idus
EC50 - Crustacea [1]	6.8 mg/l Test organisms (species): Daphnia magna
EC50 - Other aquatic organisms [1]	7 mg/l waterflea
EC50 - Other aquatic organisms [2]	5 mg/l
EC50 72h - Algae [1]	103.8 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)

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Citronellal (106-23-0)	
LC50 - Fish [1]	≈ 22 mg/l Test organisms (species): Leuciscus idus
EC50 - Crustacea [1]	8.7 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	13.33 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	6.74 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
Citronellol * (106-22-9)	
LC50 - Fish [1]	10 mg/l
EC50 - Crustacea [1]	17.48 mg/l Test organisms (species): Daphnia magna
EC50 - Other aquatic organisms [1]	17.48 mg/l waterflea
EC50 - Other aquatic organisms [2]	2.38 mg/l
EC50 72h - Algae [1]	2.4 mg/l Test organisms (species):
Ethanol (64-17-5)	
LC50 - Fish [1]	14.2 g/l Test organisms (species): Pimephales promelas
NOEC (chronic)	9.6 mg/l Test organisms (species): Daphnia magna Duration: '9 d'
Caprylyl Alcohol (111-87-5)	
LC50 - Fish [1]	13.3 mg/l Test organisms (species): Pimephales promelas
LC50 - Fish [2]	13.5 mg/l Test organisms (species): Pimephales promelas
NOEC (chronic)	1 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
Decyl Alcohol (112-30-1)	
EC50 72h - Algae [1]	1.5 mg/l Test organisms (species): other:Green algae
NOEC chronic fish	0.26 mg/l Test organisms (species): Pimephales promelas Duration: '33 d'
Linalool * (78-70-6)	
LC50 - Fish [1]	27.8 mg/l
EC50 - Crustacea [1]	59 mg/l Test organisms (species): Daphnia magna
EC50 - Other aquatic organisms [1]	20 mg/l waterflea
EC50 - Other aquatic organisms [2]	88.3 mg/l
EC50 96h - Algae [1]	88.3 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 96h - Algae [2]	156.7 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
Eugenol (97-53-0)	
LC50 - Fish [1]	13 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	1.05 mg/l Test organisms (species): Daphnia magna
Geraniol * (106-24-1)	
LC50 - Fish [1]	≈ 22 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	10.8 mg/l Test organisms (species): Daphnia magna
EC50 - Other aquatic organisms [1]	10.8 mg/l waterflea
EC50 - Other aquatic organisms [2]	13.1 mg/l
EC50 72h - Algae [1]	13.1 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
Limonene (138-86-3)	
LC50 - Fish [1]	0.72 mg/l
EC50 - Other aquatic organisms [1]	0.36 mg/l waterflea

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Methyl palmitate (112-39-0)	
LC50 - Fish [1]	550 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	> 0.02 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 0.023 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
LOEC (chronic)	> 0.22 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	> 0.22 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
Nonanal (124-19-6)	
LC50 - Fish [1]	2.1 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
LC50 - Fish [2]	1.45 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	1.54 mg/l Test organisms (species): Daphnia magna
Octanal (124-13-0)	
EC50 - Crustacea [1]	1.54 mg/l Test organisms (species): Daphnia magna
Terpinolene (586-62-9)	
LC50 - Fish [1]	0.805 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	0.634 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	0.692 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	0.302 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
Methyl stearate (112-61-8)	
LC50 - Fish [1]	0.021 mg/l Source: ECOSAR
EC50 - Crustacea [1]	> 0.02 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	> 0.023 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [1]	0.002 mg/l Source: ECOSAR
12.2. Persistence and degradability	
No additional information available	
12.3. Bioaccumulative potential	
Alpha bisabolol (515-69-5)	
Partition coefficient n-octanol/water (Log Pow)	5.63 Source: Ecological Structure Activity Relationships
Alpha pinene (80-56-8)	
Partition coefficient n-octanol/water (Log Pow)	4.32
Citral (neral + geranial) * (5392-40-5)	
Partition coefficient n-octanol/water (Log Pow)	2.8
Citronellol * (106-22-9)	
Partition coefficient n-octanol/water (Log Pow)	3.1
Linalool * (78-70-6)	
Partition coefficient n-octanol/water (Log Pow)	2.84
Geraniol * (106-24-1)	
Partition coefficient n-octanol/water (Log Pow)	3.5
Limonene (138-86-3)	
Partition coefficient n-octanol/water (Log Pow)	4.38

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Nerol (106-25-2)	
Partition coefficient n-octanol/water (Log Pow)	3.47
Methyl stearate (112-61-8)	
Partition coefficient n-octanol/water (Log Pow)	8.35 Source: ChemIDplus
12.4. Mobility in soil	
Alpha bisabolol (515-69-5)	
Mobility in soil	3.628 Source: Quantitative Structure Activity Relation
12.5. Results of PBT and vPvB assessment	
No additional information available	
12.6. Endocrine disrupting properties	
No additional information available	
12.7. Other adverse effects	
No additional information available	

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Additional information : Flammable vapours may accumulate in the container.

SECTION 14: Transport information

In accordance with ADR / IMDG / IATA / ADN / RID

ADR	IMDG	IATA	ADN	RID
14.1. UN number or ID number				
UN 1197	UN 1197	UN 1197	UN 1197	UN 1197
14.2. UN proper shipping name				
EXTRACTS, FLAVOURING, LIQUID	EXTRACTS, FLAVOURING, LIQUID	Extracts, flavouring, liquid	EXTRACTS, FLAVOURING, LIQUID	EXTRACTS, FLAVOURING, LIQUID
Transport document description				
UN 1197 EXTRACTS, FLAVOURING, LIQUID, 3, III, (D/E), ENVIRONMENTALLY HAZARDOUS	UN 1197 EXTRACTS, FLAVOURING, LIQUID, 3, III, MARINE POLLUTANT/ENVIRONME NTALLY HAZARDOUS	UN 1197 Extracts, flavouring, liquid, 3, III, ENVIRONMENTALLY HAZARDOUS	UN 1197 EXTRACTS, FLAVOURING, LIQUID, 3, III, ENVIRONMENTALLY HAZARDOUS	UN 1197 EXTRACTS, FLAVOURING, LIQUID, 3, III, ENVIRONMENTALLY HAZARDOUS
14.3. Transport hazard class(es)				
3	3	3	3	3
14.4. Packing group				
III	III	III	III	III
14.5. Environmental hazards				
Dangerous for the environment: Yes	Dangerous for the environment: Yes Marine pollutant: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes	Dangerous for the environment: Yes
No supplementary information available				

14.6. Special precautions for user

Overland transport

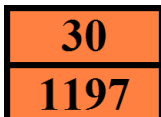
Classification code (ADR) : F1
Special provisions (ADR) : 601
Limited quantities (ADR) : 5I
Excepted quantities (ADR) : E1
Packing instructions (ADR) : P001, IBC03, LP01, R001

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Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T2
Portable tank and bulk container special provisions (ADR) : TP1
Tank code (ADR) : LGBF
Vehicle for tank carriage : FL
Transport category (ADR) : 3
Special provisions for carriage - Packages (ADR) : V12
Special provisions for carriage - Operation (ADR) : S2
Hazard identification number (Kemler No.) : 30
Orange plates :



Tunnel restriction code (ADR) : D/E

Transport by sea

Special provisions (IMDG) : 223, 955
Limited quantities (IMDG) : 5 L
Excepted quantities (IMDG) : E1
Packing instructions (IMDG) : P001, LP01
IBC packing instructions (IMDG) : IBC03
Tank instructions (IMDG) : T2
Tank special provisions (IMDG) : TP1
EmS-No. (Fire) : F-E
EmS-No. (Spillage) : S-D
Stowage category (IMDG) : A
Properties and observations (IMDG) : Usually consist of alcoholic solutions. Miscibility with water depends upon the composition.

Air transport

PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y344
PCA limited quantity max net quantity (IATA) : 10L
PCA packing instructions (IATA) : 355
PCA max net quantity (IATA) : 60L
CAO packing instructions (IATA) : 366
CAO max net quantity (IATA) : 220L
Special provisions (IATA) : A3
ERG code (IATA) : 3L

Inland waterway transport

Classification code (ADN) : F1
Special provisions (ADN) : 601
Limited quantities (ADN) : 5 L
Excepted quantities (ADN) : E1
Equipment required (ADN) : PP, EX, A
Ventilation (ADN) : VE01
Number of blue cones/lights (ADN) : 0

Rail transport

Classification code (RID) : F1
Special provisions (RID) : 601
Limited quantities (RID) : 5L
Excepted quantities (RID) : E1
Packing instructions (RID) : P001, IBC03, LP01, R001
Mixed packing provisions (RID) : MP19

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Portable tank and bulk container instructions (RID)	: T2
Portable tank and bulk container special provisions (RID)	: TP1
Tank codes for RID tanks (RID)	: LGBF
Transport category (RID)	: 3
Special provisions for carriage – Packages (RID)	: W12
Colis express (express parcels) (RID)	: CE4
Hazard identification number (RID)	: 30

14.7. Maritime transport in bulk according to IMO instruments

Not established.

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

REACH Annex XVII (Restriction List)

No REACH Annex XVII restrictions

REACH Annex XIV (Authorisation List)

Sweet orange essential oil, organic, Mexico is not on the REACH Annex XIV List

REACH Candidate List (SVHC)

Sweet orange essential oil, organic, Mexico is not on the REACH Candidate List

PIC Regulation (Prior Informed Consent)

Sweet orange essential oil, organic, Mexico is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

POP Regulation (Persistent Organic Pollutants)

Sweet orange essential oil, organic, Mexico is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Ozone Regulation (1005/2009)

Sweet orange essential oil, organic, Mexico is not subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.

Explosives Precursors Regulation (2019/1148)

Contains substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

ANNEX II REPORTABLE EXPLOSIVES PRECURSORS

List of substances on their own or in mixtures or in substances for which suspicious transactions and significant disappearances and thefts are to be reported to the relevant national contact point within 24 hours.

Name	CAS-No.	Combined Nomenclature code (CN)	Combined Nomenclature code for mixture without constituents which would determine classification under another CN code
Acetone	67-64-1	2914 11 00	ex 3824 99 92

Please see https://ec.europa.eu/home-affairs/system/files/2021-11/list_of_competent_authorities_and_national_contact_points_en.pdf

Drug Precursors Regulation (273/2004)

Contains substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on drug precursors)

Name	CN designation	CAS-No.	CN code	Category	Threshold	Annex
Acetone		67-64-1	2914 11 00	Category 3		Annex I

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15.1.2. National regulations

France

Occupational diseases	
Code	Description
RG 84	Conditions caused by liquid organic solvents for professional use: saturated or unsaturated aliphatic or cyclic liquid hydrocarbons and mixtures thereof; liquid halogenated hydrocarbons; nitrated derivatives of aliphatic hydrocarbons; alcohols; glycols, glycol ethers; ketones; aldehydes; aliphatic and cyclic ethers, including tetrahydrofuran; esters; dimethylformamide and dimethylacetamine; acetonitrile and propionitrile; pyridine; dimethylsulfone and dimethylsulfoxide

15.2. Chemical safety assessment

No chemical safety assessment has been carried out

SECTION 16: Other information

Abbreviations and acronyms:	
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BLV	Biological limit value
BOD	Biochemical oxygen demand (BOD)
COD	Chemical oxygen demand (COD)
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC-No.	European Community number
EC50	Median effective concentration
EN	European Standard
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IMDG	International Maritime Dangerous Goods
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
STP	Sewage treatment plant
ThOD	Theoretical oxygen demand (ThOD)
TLM	Median Tolerance Limit
VOC	Volatile Organic Compounds
CAS-No.	Chemical Abstract Service number
N.O.S.	Not Otherwise Specified

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Abbreviations and acronyms:

vPvB	Very Persistent and Very Bioaccumulative
ED	Endocrine disrupting properties

Full text of H- and EUH-statements:

Acute Tox. 3 (Dermal)	Acute toxicity (dermal), Category 3
Acute Tox. 3 (Inhalation)	Acute toxicity (inhal.), Category 3
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral), Category 4
Aquatic Acute 1	Hazardous to the aquatic environment – Acute Hazard, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment – Chronic Hazard, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment – Chronic Hazard, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment – Chronic Hazard, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Dam. 1	Serious eye damage/eye irritation, Category 1
Eye Irrit. 2	Serious eye damage/eye irritation, Category 2
Flam. Liq. 2	Flammable liquids, Category 2
Flam. Liq. 3	Flammable liquids, Category 3
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.
Repr. 2	Reproductive toxicity, Category 2
Skin Corr. 1B	Skin corrosion/irritation, Category 1, Sub-Category 1B
Skin Corr. 1C	Skin corrosion/irritation, Category 1, Sub-Category 1C
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1

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Full text of H- and EUH-statements:	
Skin Sens. 1B	Skin sensitisation, category 1B
STOT RE 1	Specific target organ toxicity – Repeated exposure, Category 1
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2
STOT SE 3	Specific target organ toxicity – Single exposure, Category 3, Narcosis

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.