

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

1.1. Product identifier

Product form	: Substance
Substance name	: Litsea cubeba organic essential oil, all origins
EC-No.	: 290-018-7
CAS-No.	: 68855-99-2
Product code	: 10260TOC
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
Function or use category	: Flavoring agent, Perfuming agent, Cosmetics

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

SIRIUS
57 Chemin de la Métairie Haute
81580 CAMBONNET 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]

Skin corrosion/irritation, Category 2	H315
Serious eye damage/eye irritation, Category 2	H319
Skin sensitisation, Category 1	H317
Hazardous to the aquatic environment — Chronic Hazard, Category 2	H411
Full text of H statements : see section 16	

Adverse physicochemical, human health and environmental effects

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Toxic to aquatic life with long lasting effects.

2.2. Label elements

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

Hazard pictograms (CLP)



GHS07

GHS09

Signal word (CLP)

: Warning

Hazard statements (CLP)

: H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements (CLP)

: P261 - Avoid breathing spray, fume, vapours.
P264 - Wash hands thoroughly after handling.
P280 - Wear protective gloves, protective clothing, eye protection.
P321 - Specific treatment (see supplemental first aid instruction on this label).
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P391 - Collect spillage.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Name	: Litsea cubeba organic essential oil, all origins
CAS-No.	: 68855-99-2

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EC-No.

: 290-018-7

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	50 – 80	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1, H317
Limonene	(CAS-No.) 138-86-3 (EC-No.) 227-813-5 (EC Index-No.) 601-029-00-7 (REACH-no) 01-2119529223-47	5 – 20	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
6-Methyl-5-Heptene-2-One	(CAS-No.) 110-93-0 (EC-No.) 203-816-7	1 – 5	Flam. Liq. 3, H226
Linalool *	(CAS-No.) 78-70-6 (EC-No.) 201-134-4 (EC Index-No.) 603-235-00-2 (REACH-no) 01-2119474016-42	1 – 5	Skin Sens. 1B, H317
1,8 Cineole	(CAS-No.) 470-82-6 (EC-No.) 207-431-5	0.1 – 5	Flam. Liq. 3, H226 Skin Sens. 1B, H317
Myrcene	(CAS-No.) 123-35-3 (EC-No.) 204-622-5	0.1 – 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
Delta terpineol	(CAS-No.) 7299-42-5 (EC-No.) 230-739-6	1 – 5	Not classified
Beta Pinene	(CAS-No.) 127-91-3 (EC-No.) 204-872-5	0.1 – 5	Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317
Sabinene	(CAS-No.) 3387-41-5 (EC-No.) 222-212-4	0.1 – 5	Acute Tox. 4 (Oral), H302
Trans isocitral	(CAS-No.) 55722-59-3 (EC-No.) 259-777-1	0.1 – 5	Not classified
Trans-p-mentha 2,8-dien-1-ol	(CAS-No.) 52154-82-2	< 5	Not classified
Beta Caryophyllene	(CAS-No.) 87-44-5 (EC-No.) 201-746-1	0.1 – 5	Asp. Tox. 1, H304 Aquatic Chronic 4, H413 Skin Sens. 1B, H317
Alpha pinene	(CAS-No.) 80-56-8 (EC-No.) 201-291-9 (REACH-no) 01-2119519223-49	< 5	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304
Citronellal	(CAS-No.) 106-23-0 (EC-No.) 203-376-6	< 5	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1B, H317
Citronellol *	(CAS-No.) 106-22-9 (EC-No.) 203-375-0 (REACH-no) 01-2119453995-23	0.1 – 5	Eye Irrit. 2, H319 Skin Irrit. 2, H315 Skin Sens. 1B, H317
Geraniol *	(CAS-No.) 106-24-1 (EC-No.) 203-377-1 (REACH-no) 01-2119552430-49	0.1 – 5	Skin Sens. 1B, H317 Skin Irrit. 2, H315 Eye Dam. 1, H318

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Delta 3-carene	(CAS-No.) 13466-78-9 (EC-No.) 236-719-3	0.1 – 5	Skin Sens. 1, H317 Skin Irrit. 2, H315 Flam. Liq. 3, H226 Asp. Tox. 1, H304 Aquatic Chronic 1, H410 Aquatic Acute 1, H400 Acute Tox. 4 (Inhalation), H332
Nerol	(CAS-No.) 106-25-2 (EC-No.) 203-378-7 (REACH-no) 01-2119983244-33	0.1 – 5	Skin Irrit. 2, H315 Skin Sens. 1B, H317 Eye Irrit. 2, H319
Isoneral		0.1 – 5	Not classified
Cis Isocitral	(CAS-No.) 72203-97-5	0.1 – 1	Not classified
Alpha terpineol	(CAS-No.) 98-55-5 (EC-No.) 202-680-6	0.1 – 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319
Beta fenchyl alcohol	(CAS-No.) 470-08-6	0.1 – 1	Not classified
Camphene	(CAS-No.) 79-92-5 (EC-No.) 201-234-8	0.1 – 1	Flam. Sol. 2, H228 Eye Irrit. 2, H319 Aquatic Chronic 1, H410
Trans caryophyllene	(CAS-No.) 87-44-5 (EC-No.) 201-746-1	0.1 – 1	Asp. Tox. 1, H304 Aquatic Chronic 4, H413 Skin Sens. 1B, H317
Alpha thuyene	(CAS-No.) 2867-05-2 (EC-No.) 220-686-7	< 1	Not classified
Terpinen-4-ol	(CAS-No.) 562-74-3 (EC-No.) 209-235-5	0.1 – 1	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319
Beta Elemen	(CAS-No.) 33880-83-0 (EC-No.) 251-713-0	0.1 – 1	Not classified
Caryophyllene oxide	(CAS-No.) 1139-30-6 (EC-No.) 214-519-7	0.1 – 1	Aquatic Chronic 2, H411
Borneol	(CAS-No.) 507-70-0 (EC-No.) 208-080-0	< 1	Skin Irrit. 2, H315 Flam. Sol. 1, H228 Aquatic Chronic 2, H411
Alpha Phellandrene	(CAS-No.) 99-83-2 (EC-No.) 202-792-5	0.1 – 1	Asp. Tox. 1, H304 Flam. Liq. 3, H226
Alpha copaene	(CAS-No.) 3856-25-5 (EC-No.) 223-364-4	< 1	Not classified
Bicyclogermacrene	(CAS-No.) 24703-35-3	< 1	Not classified
Alpha Humulene	(CAS-No.) 6753-98-6 (EC-No.) 229-816-7	0.1 – 1	Not classified
Lavandulol	(CAS-No.) 498-16-8	0.1 – 1	Not classified
Gamma terpinene	(CAS-No.) 99-85-4 (EC-No.) 202-794-6	< 0.1	Repr. 2, H361 Flam. Liq. 3, H226 Asp. Tox. 1, H304
Terpinolene	(CAS-No.) 586-62-9 (EC-No.) 209-578-0	< 0.1	Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410 Skin Sens. 1B, H317
Beta Farnesene	(CAS-No.) 18794-84-8 (EC-No.) 242-582-0	< 0.1	Asp. Tox. 1, H304
Beta bisabolene	(CAS-No.) 495-61-4	< 0.1	Asp. Tox. 1, H304 Skin Irrit. 2, H315 Skin Sens. 1B, H317

Full text of H-statements: see section 16

3.2. Mixtures

Not established.

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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	: Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
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.
Symptoms/effects after eye contact	: Eye irritation.

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

Hazardous decomposition products in case of fire	: Toxic fumes may be released.
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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. 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.
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.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Avoid contact with skin and eyes. Wear personal protective equipment. 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

Storage conditions	: Store in a well-ventilated place. Keep cool.
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7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

No additional information available

8.2. Exposure controls

Appropriate engineering controls:

Ensure good ventilation of the work station.

Hand protection:

Protective gloves

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Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):



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
Appearance	: Clear.
Colour	: Yellow to yellow-orange.
Odour	: characteristic. Fresh.
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate=1)	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 71 °C
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapour pressure	: No data available
Relative vapour density at 20 °C	: No data available
Relative density	: 0.882 – 0.905
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

9.2. Other information

Refractive index	: 1.48 – 1.49
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SECTION 10: Stability and reactivity

10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

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

None under recommended storage and handling conditions (see section 7).

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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 toxicological effects

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

Litsea cubeba organic essential oil, all origins (68855-99-2)

LD50 dermal	4800 mg/kg bodyweight
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1,8 Cineole (470-82-6)

LD50 oral	2480 mg/kg bodyweight
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LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal))
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ATE CLP (oral)	2480 mg/kg bodyweight
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Alpha pinene (80-56-8)

LD50 oral	3700 mg/kg bodyweight
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LD50 dermal	> 5000 mg/kg bodyweight
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ATE CLP (oral)	3700 mg/kg bodyweight
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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
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LD50 oral	4300 mg/kg bodyweight
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LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
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LD50 dermal rabbit	> 3000 mg/kg OECD 402
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Beta Pinene (127-91-3)

LD50 oral rat	300 – 2000 mg/kg OCDE 423
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LD50 dermal rat	> 2000 mg/kg
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ATE CLP (oral)	300 mg/kg bodyweight
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Borneol (507-70-0)

LD50 oral	2500 mg/kg bodyweight
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ATE CLP (oral)	2500 mg/kg bodyweight
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Camphene (79-92-5)

LD50 oral rat	> 2000 mg/kg bodyweight Animal: other:rat and mouse
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LD50 oral	> 5000 mg/kg bodyweight Animal: mouse
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LD50 dermal rat	> 2500 mg/kg bodyweight Animal:
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LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit
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LC50 inhalation rat (mg/l)	> 25 mg/l air Animal:
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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
ATE CLP (oral)	2500 mg/kg bodyweight
ATE CLP (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 - mg/l/4h)	1.5 mg/l/4h
ATE CLP (oral)	4800 mg/kg bodyweight
ATE CLP (gases)	4500 ppmv/4h
ATE CLP (vapours)	11 mg/l/4h
ATE CLP (dust,mist)	1.5 mg/l/4h

Gamma terpinene (99-85-4)	
LD50 oral	3850 mg/kg bodyweight
ATE CLP (oral)	3850 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
ATE CLP (oral)	2100 mg/kg bodyweight

Limonene (138-86-3)	
LD50 oral	4400 mg/kg bodyweight
LD50 dermal	> 2000 mg/kg bodyweight
ATE CLP (oral)	4400 mg/kg bodyweight

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

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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
ATE CLP (oral)	2790 mg/kg bodyweight
ATE CLP (dermal)	5610 mg/kg bodyweight

Nerol (106-25-2)

LD50 oral	4500 mg/kg bodyweight
LD50 dermal	> 5000 mg/kg bodyweight

Sabinene (3387-41-5)

ATE CLP (oral)	500 mg/kg bodyweight
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Terpinen-4-ol (562-74-3)

ATE CLP (oral)	500 mg/kg bodyweight
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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)
ATE CLP (oral)	3775 mg/kg bodyweight

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
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)
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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)
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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:Effect type: toxicity (migrated information)
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Reproductive toxicity : Not classified

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

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)
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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)
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STOT-single exposure : Not classified

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)
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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)
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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)

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)
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Geraniol * (106-24-1)

NOAEL (dermal, rat/rabbit, 90 days)	300 mg/kg bodyweight Animal: rat, Guideline: other:OECD Guideline 421 (Reproduction/Developmental Toxicity Screening test), Guideline: other:EPA OPPTS 870.3550 (Reproduction/Developmental Toxicity Screening Test)
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Linalool * (78-70-6)

LOAEL (dermal, rat/rabbit, 90 days)	Animal: rat, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)
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Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : Toxic to aquatic life with long lasting effects.

Hazardous to the aquatic environment, short-term (acute) : Not classified

Hazardous to the aquatic environment, long-term (chronic) : 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 Daphnia 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)

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 Daphnia 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 Daphnia 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 Daphnia 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)

Citronellal (106-23-0)	
LC50 fish 1	≈ 22 mg/l Test organisms (species): Leuciscus idus
EC50 Daphnia 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 Daphnia 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

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EC50 72h algae (1)	2.4 mg/l Test organisms (species):
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Geraniol * (106-24-1)

LC50 fish 1	≈ 22 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 Daphnia 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

Linalool * (78-70-6)

LC50 fish 1	27.8 mg/l
EC50 Daphnia 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)

Terpinolene (586-62-9)

LC50 fish 1	0.805 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 Daphnia 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)

12.2. Persistence and degradability

No additional information available

12.3. Bioaccumulative potential

Alpha pinene (80-56-8)

Partition coefficient n-octanol/water (Log Pow)	4.32
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Citral (neral + geranial) * (5392-40-5)

Partition coefficient n-octanol/water (Log Pow)	2.8
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Citronellol * (106-22-9)

Partition coefficient n-octanol/water (Log Pow)	3.1
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Geraniol * (106-24-1)

Partition coefficient n-octanol/water (Log Pow)	3.5
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Limonene (138-86-3)

Partition coefficient n-octanol/water (Log Pow)	4.38
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Linalool * (78-70-6)	
Partition coefficient n-octanol/water (Log Pow)	2.84

Nerol (106-25-2)	
Partition coefficient n-octanol/water (Log Pow)	3.47

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. 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.

SECTION 14: Transport information

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

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
UN 3082	UN 3082	UN 3082	UN 3082	UN 3082
14.2. UN proper shipping name				
ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beta Pinene)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beta Pinene)	Environmentally hazardous substance, liquid, n.o.s. (Beta Pinene)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beta Pinene)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beta Pinene)
Transport document description				
UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beta Pinene), 9, III, (-)	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beta Pinene), 9, III, MARINE POLLUTANT	UN 3082 Environmentally hazardous substance, liquid, n.o.s. (Beta Pinene), 9, III	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beta Pinene), 9, III	UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Beta Pinene), 9, III
14.3. Transport hazard class(es)				
9	9	9	9	9
				
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) : M6
 Special provisions (ADR) : 274, 335, 375, 601
 Limited quantities (ADR) : 5I
 Excepted quantities (ADR) : E1
 Packing instructions (ADR) : P001, IBC03, LP01, R001
 Special packing provisions (ADR) : PP1

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Mixed packing provisions (ADR) : MP19
Portable tank and bulk container instructions (ADR) : T4
Portable tank and bulk container special provisions (ADR) : TP1, TP29
Tank code (ADR) : LGBV
Vehicle for tank carriage : AT
Transport category (ADR) : 3
Special provisions for carriage - Packages (ADR) : V12
Special provisions for carriage - Loading, unloading and handling (ADR) : CV13
Hazard identification number (Kemler No.) : 90
Orange plates :



Tunnel restriction code (ADR) : -

Transport by sea

Special provisions (IMDG) : 274, 335, 969
Limited quantities (IMDG) : 5 L
Excepted quantities (IMDG) : E1
Packing instructions (IMDG) : LP01, P001
Special packing provisions (IMDG) : PP1
IBC packing instructions (IMDG) : IBC03
Tank instructions (IMDG) : T4
Tank special provisions (IMDG) : TP1, TP29
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-F
Stowage category (IMDG) : A

Air transport

PCA Excepted quantities (IATA) : E1
PCA Limited quantities (IATA) : Y964
PCA limited quantity max net quantity (IATA) : 30kgG
PCA packing instructions (IATA) : 964
PCA max net quantity (IATA) : 450L
CAO packing instructions (IATA) : 964
CAO max net quantity (IATA) : 450L
Special provisions (IATA) : A97, A158, A197
ERG code (IATA) : 9L

Inland waterway transport

Classification code (ADN) : M6
Special provisions (ADN) : 274, 335, 375, 601
Limited quantities (ADN) : 5 L
Excepted quantities (ADN) : E1
Equipment required (ADN) : PP
Number of blue cones/lights (ADN) : 0

Rail transport

Classification code (RID) : M6
Special provisions (RID) : 274, 335, 375, 601
Limited quantities (RID) : 5L
Excepted quantities (RID) : E1
Packing instructions (RID) : P001, IBC03, LP01, R001
Special packing provisions (RID) : PP1
Mixed packing provisions (RID) : MP19
Portable tank and bulk container instructions (RID) : T4
Portable tank and bulk container special provisions (RID) : TP1, TP29
Tank codes for RID tanks (RID) : LGBV

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Transport category (RID)	: 3
Special provisions for carriage – Packages (RID)	: W12
Special provisions for carriage - Loading, unloading and handling (RID)	: CW13, CW31
Colis express (express parcels) (RID)	: CE8
Hazard identification number (RID)	: 90

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

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

No REACH Annex XVII restrictions

Litsea cubeba organic essential oil, all origins is not on the REACH Candidate List

Litsea cubeba organic essential oil, all origins is not on the REACH Annex XIV List

Litsea cubeba organic essential oil, all origins 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.

Litsea cubeba organic essential oil, all origins 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

15.1.2. National regulations

No additional information available

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
BLV	Biological limit value
CAS-No.	Chemical Abstract Service number
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DMEL	Derived Minimal Effect level
DNEL	Derived-No Effect Level
EC50	Median effective concentration
EC-No.	European Community number
EN	European Standard
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
OEL	Occupational Exposure Limit
PBT	Persistent Bioaccumulative Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet

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vPvB	Very Persistent and Very Bioaccumulative
WGK	Water Hazard Class

Full text of H- and EUH-statements:	
Acute Tox. 4 (Inhalation)	Acute toxicity (inhal.), 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 4	Hazardous to the aquatic environment — Chronic Hazard, Category 4
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. 3	Flammable liquids, Category 3
Flam. Sol. 1	Flammable solids, Category 1
Flam. Sol. 2	Flammable solids, Category 2
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
Skin Sens. 1B	Skin sensitisation, category 1B
H226	Flammable liquid and vapour.
H228	Flammable solid.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H361	Suspected of damaging fertility or the unborn child.
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.
H413	May cause long lasting harmful effects to aquatic life.

SDS EU (REACH Annex II)

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.