



OIL, BAY RUM PF*

Safety Data Sheet

according to Regulation (EU) 2015/830

Issue date: 8/2/2021 Revision date: 2/13/2024 Supersedes version of: 8/2/2021 Version: 1.3

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

1.1. Product identifier

Product form : Mixture
Product name : OIL, BAY RUM PF*
CAS-No. : N/A
Product code : 90-3043-51
Product group : Trade product

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

1.2.1. Relevant identified uses

No additional information available

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

The Lebermuth Company
4004 Technology Drive
46628 South Bend, IN
United States
T 574-259-7000 - F 574-258-7450
info@lebermuth.com - www.lebermuth.com

1.4. Emergency telephone number

Emergency number : CHEMTREC - USA: 800-424-9300 International: +1 703-527-3887 / 1-800-424-9300
CCN 13010

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 – Acute Hazard, Category 1	H400
Hazardous to the aquatic environment – Chronic Hazard, Category 2	H411

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

Adverse physicochemical, human health and environmental effects

Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Very toxic to aquatic life. 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

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Contains	: COUMARIN CRYSTALS, ALDEHYDE C-11 (UNDECYLENIC), ANETHOLE NATURAL, citronellol, geraniol, beta-caryophyllene, alpha-pinene, beta-pinene, linalool, D-limonene, Linalyl acetate, Isoeugenyl methyl ether, TOSCANOL, VERTOFIX, eugenol, HELIOTROPINE CRYSTALS
Hazard statements (CLP)	: H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H319 - Causes serious eye irritation. H410 - Very toxic to aquatic life with long lasting effects.
Precautionary statements (CLP)	: P261 - Avoid breathing dust/fume/gas/mist/vapours/spray. P264 - Wash hands, forearms and face thoroughly after handling. P272 - Contaminated work clothing should not be allowed out of the workplace. P273 - Avoid release to the environment. P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection. P302+P352 - IF ON SKIN: Wash with plenty of water. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P321 - Specific treatment (see supplemental first aid instruction on this label). P332+P313 - If skin irritation occurs: Get medical advice/attention. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P337+P313 - If eye irritation persists: Get medical advice/attention. P362+P364 - Take off contaminated clothing and wash it before reuse. P391 - Collect spillage. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

2.3. Other hazards

No additional information available

SECTION 3: Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
LINALOOL	CAS-No.: 78-70-6	10 – 25	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317
1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA- γ -2-BENZOPYRAN	CAS-No.: 1222-05-5 EC-No.: 214-946-9 EC Index-No.: 603-212-00-7	10 – 25	Aquatic Acute 1, H400 Aquatic Chronic 1, H410
LINALYL ACETATE	CAS-No.: 115-95-7 EC-No.: 204-116-4	5 – 10	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317
ACETYL CEDRENE	CAS-No.: 32388-55-9 EC-No.: 251-020-3	5 – 10	Skin Sens. 1B, H317 STOT RE 2, H373 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
ALPHA TERPINEOL	CAS-No.: 98-55-5 EC-No.: 202-680-6	5 – 10	Skin Irrit. 2, H315 Aquatic Acute 1, H400

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
D-LIMONENE substance with national workplace exposure limit(s) (DE, ES)	CAS-No.: 5989-27-5 EC-No.: 227-813-5 EC Index-No.: 601-096-00-2	1 – 5	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
COUMARIN	CAS-No.: 91-64-5 EC-No.: 202-086-7	1 – 5	Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Skin Sens. 1B, H317 Aquatic Acute 1, H400 Aquatic Chronic 3, H412
TERPINYL ACETATE	CAS-No.: 80-26-2 EC-No.: 201-265-7	1 – 5	Aquatic Chronic 2, H411
PIPERONAL	CAS-No.: 120-57-0 EC-No.: 204-409-7	1 – 5	Skin Sens. 1B, H317 Repr. 2, H361f Repr. 2, H361d
OCTAHYDRO-TETRAMETHYL-METHANO-1-NAPHTHOL	CAS-No.: 5986-55-0 EC-No.: 227-807-2	1 – 5	Aquatic Chronic 2, H411
GERANIOL	CAS-No.: 106-24-1 EC-No.: 203-377-1	1 – 5	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317
EUGENOL	CAS-No.: 97-53-0 EC-No.: 202-589-1	1 – 5	Eye Irrit. 2, H319 Skin Sens. 1B, H317
ANISIC ALDEHYDE	CAS-No.: 123-11-5 EC-No.: 204-602-6	1 – 5	STOT RE 2, H373 Aquatic Chronic 3, H412
BENZYL ACETATE substance with national workplace exposure limit(s) (BE, ES)	CAS-No.: 140-11-4 EC-No.: 205-399-7	1 – 5	Aquatic Acute 1, H400 Aquatic Chronic 3, H412
Isoeugenyl methyl ether	CAS-No.: 93-16-3 EC-No.: 202-224-6	1 – 5	Skin Sens. 1B, H317
CITRONELLOL	CAS-No.: 106-22-9 EC-No.: 203-375-0	0.1 – 1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317
BETA-PINENE substance with national workplace exposure limit(s) (BE, ES)	CAS-No.: 127-91-3 EC-No.: 204-872-5	0.1 – 1	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
trans-Anethole	CAS-No.: 104-46-1 EC-No.: 224-052-0	0.1 – 1	Skin Sens. 1B, H317 Aquatic Acute 1, H400
GAMMA-TERPINENE	CAS-No.: 99-85-4 EC-No.: 202-794-6	0.1 – 1	Flam. Liq. 3, H226 Repr. 2, H361 Asp. Tox. 1, H304 Aquatic Chronic 2, H411
1-Cyclopropylmethyl-4-methoxybenzene	CAS-No.: 16510-27-3 EC-No.: 444-110-0	0.1 – 1	Skin Sens. 1B, H317 Aquatic Chronic 2, H411
BETA-CARYOPHYLLENE	CAS-No.: 87-44-5 EC-No.: 201-746-1	0.1 – 1	Skin Sens. 1B, H317 Asp. Tox. 1, H304

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Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
ALPHA-CEDRENE	CAS-No.: 469-61-4 EC-No.: 207-418-4	0.1 – 1	Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10) Skin Irrit. 2, H315
PINENE substance with national workplace exposure limit(s) (BE, ES)	CAS-No.: 80-56-8 EC-No.: 201-291-9	0.1 – 1	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410
10-Undecenal	CAS-No.: 112-45-8 EC-No.: 203-973-1	0.1 – 1	Skin Irrit. 2, H315 Skin Sens. 1B, H317
CITRAL substance with national workplace exposure limit(s) (BE, ES)	CAS-No.: 5392-40-5 EC-No.: 226-394-6 EC Index-No.: 605-019-00-3	< 0.1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317

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

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.

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".

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.

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

CITRAL (5392-40-5)	
Belgium - Occupational Exposure Limits	
Local name	Citral (vapeur et aérosol) # Citral (damp en aérosol)
OEL TWA	32 mg/m ³
OEL TWA	5 ppm
Remark	D: la mention "D" signifie que la résorption de l'agent, via la peau, les muqueuses ou les yeux, constitue une partie importante de l'exposition totale. Cette résorption peut se faire tant par contact direct que par présence de l'agent dans l'air. # D: de vermelding "D" betekent dat de opname van het agens via de huid, de slijmvliezen of de ogen een belangrijk deel van de totale blootstelling vormt. Deze opname kan het gevolg zijn van zowel direct contact als aanwezigheid in de lucht.

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CITRAL (5392-40-5)	
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021
Spain - Occupational Exposure Limits	
Local name	Citral
VLA-ED (OEL TWA) [2]	5 ppm
Remark	Vía dérmica (Indica que, en las exposiciones a esta sustancia, la aportación por la vía cutánea puede resultar significativa para el contenido corporal total si no se adoptan medidas para prevenir la absorción. En estas situaciones, es aconsejable la utilización del control biológico para poder cuantificar la cantidad global absorbida del contaminante), Sen (Sensibilizante), FIV (Fracción inhalable y vapor. La notación FIV señala a aquellos agentes químicos que se pueden presentar en el ambiente de trabajo, tanto en forma de materia particulada como vapor, por lo que las dos fases pueden coexistir, contribuyendo ambas a la exposición. Esta situación se puede dar, principalmente, en los siguientes casos: • Cuando el agente en cuestión tiene un valor "intermedio" de presión de vapor (en estos casos se tiene en cuenta la relación entre su concentración en el aire saturado de vapor y el valor del VLA-ED® y la nota se asigna, generalmente, cuando el cociente entre ambas cantidades se encuentra entre 0.1 y 10). • Por razón de la forma de uso del agente químico (por ejemplo, pulverización). • En los procesos que conlleven cambios importantes de temperatura que puedan afectar al estado físico del agente químico. • En los procesos en los que una fracción significativa del vapor puede disolverse o adsorberse en las partículas de otra sustancia, a semejanza de lo que ocurre con los agentes solubles en agua en ambientes con humedad elevada).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
USA - ACGIH - Occupational Exposure Limits	
Local name	Citral
ACGIH OEL TWA [ppm]	5 ppm (IFV - Inhalable fraction and vapor)
Remark (ACGIH)	TLV® Basis: Body weight eff; URT irr; eye dam. Notations: Skin; DSEN; A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2023
PINENE (80-56-8)	
Belgium - Occupational Exposure Limits	
Local name	Essence de térébenthine et monoterpènes sélectionnés # Terpentijn en geselecteerde monoterpenen
OEL TWA	20 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021
Spain - Occupational Exposure Limits	
Local name	α-pineno (monoterpeno)
VLA-ED (OEL TWA) [1]	113 mg/m³
VLA-ED (OEL TWA) [2]	20 ppm
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
USA - ACGIH - Occupational Exposure Limits	
Local name	α-Pimene
ACGIH OEL TWA [ppm]	20 ppm
Remark (ACGIH)	TLV® Basis: Lung irr. Notations: DSEN; A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2023

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BETA-PINENE (127-91-3)	
Belgium - Occupational Exposure Limits	
Local name	Essence de térébenthine et monoterpènes sélectionnés # Terpentijn en geselecteerde monoterpene
OEL TWA	20 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021
Spain - Occupational Exposure Limits	
Local name	β-pineno (monoterpeno)
VLA-ED (OEL TWA) [1]	113 mg/m ³
VLA-ED (OEL TWA) [2]	20 ppm
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
USA - ACGIH - Occupational Exposure Limits	
Local name	β-Pimene
ACGIH OEL TWA [ppm]	20 ppm
Remark (ACGIH)	TLV® Basis: Lung irr. Notations: DSEN; A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2023
BENZYL ACETATE (140-11-4)	
Belgium - Occupational Exposure Limits	
Local name	Acétate de benzyle # Benzylacetaat
OEL TWA	62 mg/m ³
OEL TWA	10 ppm
Regulatory reference	Koninklijk besluit/Arrêté royal 11/05/2021
Spain - Occupational Exposure Limits	
Local name	Acetato de bencilo
VLA-ED (OEL TWA) [1]	62 mg/m ³
VLA-ED (OEL TWA) [2]	10 ppm
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT
USA - ACGIH - Occupational Exposure Limits	
Local name	Benzyl acetate
ACGIH OEL TWA [ppm]	10 ppm
Remark (ACGIH)	URT irr
Regulatory reference	ACGIH 2023
D-LIMONENE (5989-27-5)	
Germany - Occupational Exposure Limits (TRGS 900)	
Local name	(R)-p-Mentha-1,8-dien (D-Limonen)
AGW (OEL TWA) [1]	28 mg/m ³
AGW (OEL TWA) [2]	5 ppm
Peak exposure limitation factor	4(II)
Remark	DFG,H,Sh,Y
Regulatory reference	TRGS900

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D-LIMONENE (5989-27-5)	
Spain - Occupational Exposure Limits	
Local name	d-Limoneno
VLA-ED (OEL TWA) [1]	168 mg/m ³ d-Limoneno
VLA-ED (OEL TWA) [2]	30 ppm d-Limoneno
Remark	Entrada en vigor en 2018. Sen (Sensibilizante. Véase Apartado 6), Vía dérmica (Indica que, en las exposiciones a esta sustancia, la aportación por la vía cutánea puede resultar significativa para el contenido corporal total si no se adoptan medidas para prevenir la absorción. En estas situaciones, es aconsejable la utilización del control biológico para poder cuantificar la cantidad global absorbida del contaminante. Para más información véase el Apartado 5 de este documento).
Regulatory reference	Límites de Exposición Profesional para Agentes Químicos en España 2023. INSHT

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.

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.

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SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: No data available
Odour	: No data available
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	: 83 °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	: 0.929 (0.919 – 0.939)
Solubility	: Insoluble.
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	: 1.481 (1.471 – 1.491)
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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).

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

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COUMARIN (91-64-5)	
LD50 oral rat	293 mg/kg bodyweight Animal: rat, Guideline: other:
LD50 oral	290 mg/kg bodyweight
LD50 dermal rat	293 mg/kg bodyweight Animal: rat, Guideline: other:
trans-Anethole (104-46-1)	
LD50 oral rat	1420 – 3000 mg/kg bodyweight (Rat, Male / female, Experimental value, Oral)
LD50 oral	3000 mg/kg bodyweight
LD50 dermal rabbit	> 4900 mg/kg bodyweight (Equivalent or similar to EU Method B.3, 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	≥ 5.1 mg/l (OECD 403: Acute Inhalation Toxicity, 4 h, Rat, Male / female, Experimental value, Inhalation (aerosol))
ANISIC ALDEHYDE (123-11-5)	
LD50 oral rat	3210 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 oral	3210 mg/kg bodyweight
LD50 dermal rabbit	> 5000 mg/kg (Rabbit, Experimental value, Dermal, 14 day(s))
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)
GERANIOL (106-24-1)	
LD50 oral	3600 mg/kg bodyweight
CITRAL (5392-40-5)	
LD50 oral rat	≈ 6800 mg/kg bodyweight Animal: rat
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Remarks on results: other:
PINENE (80-56-8)	
LD50 oral rat	> 500 mg/kg bodyweight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 01 day(s))
LD50 oral	500 mg/kg bodyweight
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Skin, 14 day(s))
BETA-PINENE (127-91-3)	
LD50 oral rat	4700 mg/kg (Rat, Oral)
CITRONELLOL (106-22-9)	
LD50 oral rat	3450 mg/kg (Rat, Inconclusive, insufficient data, Oral)
LD50 oral	3450 mg/kg bodyweight
LD50 dermal rabbit	2650 mg/kg (Rabbit, Inconclusive, insufficient data, Dermal)
LD50 dermal	2650 mg/kg bodyweight

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LINALOOL (78-70-6)	
LD50 oral	2790 mg/kg bodyweight
1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN (1222-05-5)	
LD50 oral rat	> 4640 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Remarks on results: other:
LD50 dermal rat	> 10000 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Remarks on results: other:
BENZYL ACETATE (140-11-4)	
LD50 oral rat	> 2000 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 15 day(s))
LD50 oral	2490 mg/kg bodyweight
LD50 dermal rabbit	> 5000 mg/kg bodyweight (Rabbit, Experimental value, Dermal, 14 day(s))
TERPINYL ACETATE (80-26-2)	
LD50 oral rat	5075 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 4160 - 6190
ACETYL CEDRENE (32388-55-9)	
LD50 oral	4500 mg/kg bodyweight
LD50 dermal rabbit	> 5000 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Remarks on results: other:
D-LIMONENE (5989-27-5)	
LD50 oral rat	> 2000 mg/kg bodyweight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 5000 mg/kg bodyweight (Equivalent or similar to OECD 402, 24 h, Rabbit, Read-across, Dermal, 7 day(s))
EUGENOL (97-53-0)	
LD50 oral	2500 mg/kg bodyweight
GAMMA-TERPINENE (99-85-4)	
LD50 oral	3650 mg/kg bodyweight
Isoeugenyl methyl ether (93-16-3)	
LD50 oral	2500 mg/kg bodyweight
PIPERONAL (120-57-0)	
LD50 oral rat	2700 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), Remarks on results: other:, 95% CL: 2350 - 3100
LD50 oral	2700 mg/kg bodyweight
LD50 dermal rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: other:, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Remarks on results: other:
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
COUMARIN (91-64-5)	
IARC group	3 - Not classifiable

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BENZYL ACETATE (140-11-4)	
IARC group	3 - Not classifiable
EUGENOL (97-53-0)	
IARC group	3 - Not classifiable
CITRAL (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:
Reproductive toxicity	: Not classified
1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN (1222-05-5)	
NOAEL (animal/female, F1)	20 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 426 (Developmental Neurotoxicity Study), Guideline: other:
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
COUMARIN (91-64-5)	
NOAEL (subchronic, oral, animal/female, 90 days)	> 138.3 mg/kg bodyweight Animal: mouse, Animal sex: female
ANISIC ALDEHYDE (123-11-5)	
NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
ALPHA TERPINEOL (98-55-5)	
NOAEL (oral, rat, 90 days)	\geq 314 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
CITRAL (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)
TERPINYL ACETATE (80-26-2)	
NOAEL (oral, rat, 90 days)	\geq 400 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
ACETYL CEDRENE (32388-55-9)	
NOAEL (oral, rat, 90 days)	80 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)
NOAEL (dermal, rat/rabbit, 90 days)	300 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.
PIPERONAL (120-57-0)	
NOAEL (oral, rat, 90 days)	300 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test), Guideline: other:
Aspiration hazard	: Not classified

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SECTION 12: Ecological information

12.1. Toxicity

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

COUMARIN (91-64-5)	
LC50 - Fish [1]	2.94 mg/l Test organisms (species):
LC50 - Fish [2]	1324 mg/l Test organisms (species):
EC50 - Crustacea [1]	8012 mg/l Test organisms (species): Daphnia sp.
EC50 96h - Algae [1]	1452 mg/l Test organisms (species):
NOEC (chronic)	0.5 mg/l Test organisms (species): Duration: '21 d'
NOEC chronic fish	0.191 mg/l Test organisms (species): Duration: '30 d'
trans-Anethole (104-46-1)	
LC50 - Fish [1]	7 mg/l (EU Method C.1, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, GLP)
EC50 - Crustacea [1]	4.25 mg/l (ASTM E729-88, 48 h, Daphnia magna, Flow-through system, Experimental value)
ANISIC ALDEHYDE (123-11-5)	
LC50 - Fish [1]	148.32 mg/l (DIN 38412-15, 96 h, Leuciscus idus, Static system, Fresh water, Experimental value, Lethal)
EC50 - Crustacea [1]	82.8 mg/l (EU Method C.2, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Lethal)
EC50 72h - Algae [1]	68.4 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
ErC50 algae	61 mg/l (DIN 38412-9, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Growth rate)
LOEC (chronic)	1.53 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0.71 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
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)
CITRAL (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 72h - Algae [1]	103.8 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)

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PINENE (80-56-8)	
LC50 - Fish [1]	0.303 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, GLP)
EC50 - Crustacea [1]	0.475 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, Locomotor effect)
BETA-PINENE (127-91-3)	
LC50 - Fish [1]	0.557 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Cyprinus carpio, Semi-static system, Fresh water, Weight of evidence, Other isomer)
ErC50 algae	0.826 mg/l (OECD 201: Alga, Growth Inhibition Test, 48 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Weight of evidence, Other isomer)
CITRONELLOL (106-22-9)	
LC50 - Fish [1]	14.66 mg/l (DIN 38412-15, 96 h, Leuciscus idus, Static system, Fresh water, Experimental value)
EC50 - Crustacea [1]	17.48 mg/l (48 h, Daphnia magna, Static system, Fresh water, Experimental value)
EC50 72h - Algae [1]	2.4 mg/l (Static system, Fresh water, Experimental value)
1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN (1222-05-5)	
EC50 - Crustacea [1]	0.3 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	0.723 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	> 0.854 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
LOEC (chronic)	0.075 mg/l Test organisms (species): other aquatic crustacea: Duration: '5,5 d'
NOEC chronic fish	0.068 mg/l Test organisms (species): Pimephales promelas Duration: '36 d'
BENZYL ACETATE (140-11-4)	
LC50 - Fish [1]	4 mg/l (ASTM E729-80, 96 h, Oryzias latipes, Flow-through system, Fresh water, Experimental value)
EC50 - Crustacea [1]	17 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, GLP)
EC50 72h - Algae [1]	110 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
EC50 72h - Algae [2]	92 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
NOEC chronic fish	0.92 mg/l Test organisms (species): Oryzias latipes Duration: '28 d'
TERPINYL ACETATE (80-26-2)	
LC50 - Fish [1]	> 11 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	> 10 mg/l Test organisms (species): Daphnia magna
ErC50 algae	6.9 – 8.1 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)
ACETYL CEDRENE (32388-55-9)	
LC50 - Fish [1]	3 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Pimephales promelas, Static system, Experimental value, GLP)
LC50 - Fish [2]	3 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	0.86 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Experimental value, GLP)

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ACETYL CEDRENE (32388-55-9)	
EC50 96h - Algae [1]	2.8 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 96h - Algae [2]	> 4.3 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
ErC50 algae	> 4.3 mg/l (OECD 201: Alga, Growth Inhibition Test, 96 h, Pseudokirchneriella subcapitata, Static system, Experimental value, GLP)
LOEC (chronic)	0.23 mg/l Test organisms (species): Daphnia magna Duration: '21 d'
NOEC (chronic)	0.087 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

D-LIMONENE (5989-27-5)	
LC50 - Fish [1]	720 µg/l (Equivalent or similar to OECD 203, 96 h, Pimephales promelas, Flow-through system, Fresh water, Experimental value)
LC50 - Fish [2]	702 µg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	0.307 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, GLP)
EC50 - Crustacea [2]	0.51 mg/l Test organisms (species): Daphnia magna
EC50 72h - Algae [1]	0.32 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	0.214 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)

PIPERONAL (120-57-0)	
LC50 - Fish [1]	2.5 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Cyprinus carpio, Static system, Fresh water, Experimental value, GLP)
EC50 - Crustacea [1]	52 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 72h - Algae [1]	31 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
EC50 72h - Algae [2]	6.8 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)
ErC50 algae	31 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)

12.2. Persistence and degradability

trans-Anethole (104-46-1)	
Persistence and degradability	Readily biodegradable in water.
ANISIC ALDEHYDE (123-11-5)	
Persistence and degradability	Readily biodegradable in water.
PINENE (80-56-8)	
Persistence and degradability	Readily biodegradable in water.
BETA-PINENE (127-91-3)	
Persistence and degradability	Readily biodegradable in water.
CITRONELLOL (106-22-9)	
Persistence and degradability	Readily biodegradable in water.

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CITRONELLOL (106-22-9)	
Chemical oxygen demand (COD)	2.05 g O ₂ /g substance
ThOD	2.961 g O ₂ /g substance
BENZYL ACETATE (140-11-4)	
Persistence and degradability	Readily biodegradable in water.
TERPINYL ACETATE (80-26-2)	
Persistence and degradability	Readily biodegradable in water.
ACETYL CEDRENE (32388-55-9)	
Persistence and degradability	Not readily biodegradable in water.
D-LIMONENE (5989-27-5)	
Persistence and degradability	Readily biodegradable in water.
ThOD	3.29 g O ₂ /g substance
PIPERONAL (120-57-0)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
ThOD	1.71 g O ₂ /g substance
12.3. Bioaccumulative potential	
trans-Anethole (104-46-1)	
BCF - Fish [1]	79.92 l/kg (Pisces, QSAR, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	3.388 (QSAR, KOWWIN, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
ANISIC ALDEHYDE (123-11-5)	
Partition coefficient n-octanol/water (Log Pow)	1.56 (Practical experience/observation, Equivalent or similar to OECD 107, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
PINENE (80-56-8)	
BCF - Other aquatic organisms [1]	1233.1 – 1248 l/kg (BCFBAF v3.01, Read-across, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	4.487 (Experimental value, Equivalent or similar to OECD 107, 25 °C)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).
BETA-PINENE (127-91-3)	
BCF - Fish [1]	1125 l/kg (BCFBAF v3.01, Pisces, Fresh water, QSAR, Other isomer)
Partition coefficient n-octanol/water (Log Pow)	4.425 (Similar product, Read-across, Equivalent or similar to OECD 107, 25 °C)
Bioaccumulative potential	Potential for bioaccumulation (4 ≤ Log Kow ≤ 5).
CITRONELLOL (106-22-9)	
BCF - Fish [1]	82.59 l/kg (BCFBAF v3.00, Estimated value)
Partition coefficient n-octanol/water (Log Pow)	3.41 (Practical experience/observation, EU Method A.8: Partition Coefficient, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
BENZYL ACETATE (140-11-4)	
BCF - Fish [1]	8 (Pisces, Flow-through system, Calculated value)

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BENZYL ACETATE (140-11-4)	
Partition coefficient n-octanol/water (Log Pow)	1.96 (Experimental value, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
TERPINYL ACETATE (80-26-2)	
BCF - Other aquatic organisms [1]	1100 l/kg (Literature study)
Partition coefficient n-octanol/water (Log Pow)	4.4 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 30 °C)
Bioaccumulative potential	Potential for bioaccumulation (4 ≤ Log Kow ≤ 5).
ACETYL CEDRENE (32388-55-9)	
BCF - Fish [1]	867 – 3920 (OECD 305: Bioconcentration: Flow-Through Fish Test, 28 day(s), Oncorhynchus mykiss, Flow-through system, Fresh water, Experimental value, GLP)
Partition coefficient n-octanol/water (Log Pow)	5.6 – 5.9 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).
D-LIMONENE (5989-27-5)	
BCF - Fish [1]	864.8 l/kg (BCFBAF v3.01, Pisces, QSAR, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	4.38 (Experimental value, Equivalent or similar to OECD 117, 37 °C)
Bioaccumulative potential	Potential for bioaccumulation (4 ≤ Log Kow ≤ 5).
PIPERONAL (120-57-0)	
Partition coefficient n-octanol/water (Log Pow)	1.2 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 35 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
12.4. Mobility in soil	
trans-Anethole (104-46-1)	
Surface tension	35 mN/m (25 °C)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.717 – 2.856 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Low potential for adsorption in soil.
ANISIC ALDEHYDE (123-11-5)	
Surface tension	No data available in the literature
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1 (log Koc, SRC PCKOCWIN v2.0, Experimental value)
Ecology - soil	Highly mobile in soil.
PINENE (80-56-8)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.009 – 3.853 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Low potential for mobility in soil. May be harmful to plant growth, blooming and fruit formation.
BETA-PINENE (127-91-3)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.009 – 3.836 (log Koc, Calculated value, Other isomer)

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BETA-PINENE (127-91-3)	
Ecology - soil	Low potential for mobility in soil.
CITRONELLOL (106-22-9)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.85 (log Koc, EPIWIN 2.00, Estimated value)
Ecology - soil	Highly mobile in soil.
BENZYL ACETATE (140-11-4)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.4 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value, GLP)
Ecology - soil	Low potential for adsorption in soil.
TERPINYL ACETATE (80-26-2)	
Surface tension	No data available in the literature
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.79 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Read-across, GLP)
Ecology - soil	Low potential for adsorption in soil.
ACETYL CEDRENE (32388-55-9)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.5 – 5.1 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value, GLP)
Ecology - soil	Low potential for mobility in soil.
D-LIMONENE (5989-27-5)	
Surface tension	No data available in the literature
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.049 – 3.801 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Low potential for mobility in soil.
PIPERONAL (120-57-0)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.1 (log Koc, Calculated value)
Ecology - soil	Highly mobile in soil.

12.5. Results of PBT and vPvB assessment

Component	
ACETYL CEDRENE (32388-55-9)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
D-LIMONENE (5989-27-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
TERPINYL ACETATE (80-26-2)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
PIPERONAL (120-57-0)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
ANISIC ALDEHYDE (123-11-5)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

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Component	
BENZYL ACETATE (140-11-4)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
CITRONELLOL (106-22-9)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
BETA-PINENE (127-91-3)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
trans-Anethole (104-46-1)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII
PINENE (80-56-8)	This substance/mixture does not meet the PBT criteria of REACH regulation, annex XIII This substance/mixture does not meet the vPvB criteria of REACH regulation, annex XIII

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 / IMDG / IATA / ADN / RID

14.1 UN number

UN-No. (ADR) : UN 3082
UN-No. (IMDG) : UN 3082
UN-No. (IATA) : UN 3082
UN-No. (ADN) : UN 3082
UN-No. (RID) : UN 3082

14.2. UN proper shipping name

Proper Shipping Name (ADR) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN, ACETYL CEDRENE)

Proper Shipping Name (IMDG) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN, ACETYL CEDRENE)

Proper Shipping Name (IATA) : Environmentally hazardous substance, liquid, n.o.s. (1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN, ACETYL CEDRENE)

Proper Shipping Name (ADN) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN, ACETYL CEDRENE)

Proper Shipping Name (RID) : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN, ACETYL CEDRENE)

Transport document description (ADR) : UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN, ACETYL CEDRENE), 9, III, (-)

Transport document description (IMDG) : UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN, ACETYL CEDRENE), 9, III, MARINE POLLUTANT

Transport document description (IATA) : UN 3082 Environmentally hazardous substance, liquid, n.o.s. (1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN, ACETYL CEDRENE), 9, III

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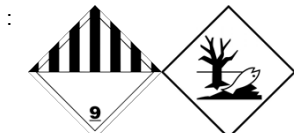
Transport document description (ADN)	: UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN, ACETYL CEDRENE), 9, III
Transport document description (RID)	: UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN, ACETYL CEDRENE), 9, III

14.3. Transport hazard class(es)

ADR

Transport hazard class(es) (ADR) : 9

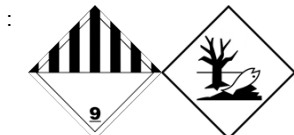
Danger labels (ADR) : 9



IMDG

Transport hazard class(es) (IMDG) : 9

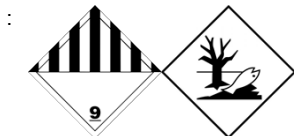
Danger labels (IMDG) : 9



IATA

Transport hazard class(es) (IATA) : 9

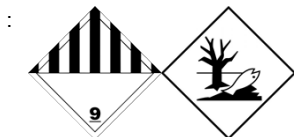
Danger labels (IATA) : 9



ADN

Transport hazard class(es) (ADN) : 9

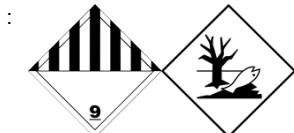
Danger labels (ADN) : 9



RID

Transport hazard class(es) (RID) : 9

Danger labels (RID) : 9



14.4. Packing group

Packing group (ADR) : III

Packing group (IMDG) : III

Packing group (IATA) : III

Packing group (ADN) : III

Packing group (RID) : III

14.5. Environmental hazards

Dangerous for the environment : Yes

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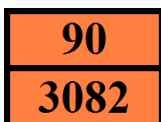
according to Regulation (EU) 2015/830

Marine pollutant : Yes
Other information : 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
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) : -
EAC code : •3Z

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, A215
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
Carriage permitted (ADN) : T
Equipment required (ADN) : PP
Number of blue cones/lights (ADN) : 0

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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
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 applicable

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

EU restriction list (REACH Annex XVII)

Reference code	Applicable on
3(a)	PINENE ; BETA-PINENE ; D-LIMONENE ; GAMMA-TERPINENE
3(b)	OIL, BAY RUM PF* ; 10-Undecenal ; ALPHA TERPINEOL ; trans-Anethole ; ANISIC ALDEHYDE ; CITRONELLOL ; GERANIOL ; BETA-CARYOPHYLLENE ; CITRAL ; PINENE ; BETA-PINENE ; LINALOOL ; D-LIMONENE ; GAMMA-TERPINENE ; LINALYL ACETATE ; Isoeugenyl methyl ether ; 1-Cyclopropylmethyl-4-methoxybenzene ; ACETYL CEDRENE ; ALPHA-CEDRENE ; EUGENOL
3(c)	OIL, BAY RUM PF* ; ALPHA TERPINEOL ; trans-Anethole ; ANISIC ALDEHYDE ; BENZYL ACETATE ; 1,3,4,6,7,8-HEXAHYDRO-4,6,6,7,8-HEXAMETHYLCYCLOPENTA-γ-2-BENZOPYRAN ; PINENE ; BETA-PINENE ; D-LIMONENE ; GAMMA-TERPINENE ; TERPINYL ACETATE ; 1-Cyclopropylmethyl-4-methoxybenzene ; ACETYL CEDRENE ; ALPHA-CEDRENE ; OCTAHYDRO-TETRAMETHYL-METHANO-1-NAPHTHOL
40.	PINENE ; BETA-PINENE ; D-LIMONENE ; GAMMA-TERPINENE

Contains no substance(s) listed on the REACH Candidate List

Contains no substance(s) listed on REACH Annex XIV (Authorisation List)

Contains no substance(s) listed on the PIC list (Regulation EU 649/2012 concerning the export and import of hazardous chemicals)

Contains no substance(s) listed on the POP list (Regulation EU 2019/1021 on persistent organic pollutants)

Contains no substance(s) listed on the Explosives Precursors list (Regulation EU 2019/1148 on the marketing and use of explosives precursors)

15.1.2. National regulations

Germany

Water hazard class (WGK) : Not classified according to Regulation Governing Systems for Handling Substances Hazardous to Waters (AwSV)

Hazardous Incident Ordinance (12. BImSchV) : Is not subject to the Hazardous Incident Ordinance (12. BImSchV)

Netherlands

SZW-lijst van kankerverwekkende stoffen : None of the components are listed

SZW-lijst van mutagene stoffen : None of the components are listed

SZW-lijst van reprotoxische stoffen – Borstvoeding : None of the components are listed

SZW-lijst van reprotoxische stoffen – Vruchtbaarheid : None of the components are listed

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SZW-lijst van reprotoxische stoffen – Ontwikkeling : None of the components are listed

Denmark

Class for fire hazard : Class III-1

Store unit : 50 liter

Classification remarks : Flammable according to the Danish Ministry of Justice; Emergency management guidelines for the storage of flammable liquids must be followed

Danish National Regulations : Young people below the age of 18 years are not allowed to use the product
Pregnant/breastfeeding women working with the product must not be in direct contact with the product

Switzerland

Storage class (LK) : LK 10/12 - Liquids

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

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Abbreviations and acronyms:

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
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 (Oral)	Acute toxicity (oral), Category 3
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. 3	Flammable liquids, Category 3
H226	Flammable liquid and vapour.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H361	Suspected of damaging fertility or the unborn child.
H361d	Suspected of damaging the unborn child.
H361f	Suspected of damaging fertility.
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

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Full text of H- and EUH-statements:

Skin Irrit. 2	Skin corrosion/irritation, Category 2
Skin Sens. 1	Skin sensitisation, Category 1
Skin Sens. 1B	Skin sensitisation, category 1B
STOT RE 2	Specific target organ toxicity – Repeated exposure, Category 2

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.