Safety data sheet

acc. to Safe Work Australia - Code of Practice

Oil of chamomile , artificial

article number: **3305**
Version: **GHS 2.0 en**
Replaces version of: 2021-09-23
Version: (GHS 1)

date of compilation: 2021-09-23
Revision: 2023-02-03

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

1.1 Product identifier

Identification of the substance	**Oil of chamomile** , artificial
Article number	3305
Alternative name(s)	Oleum Chamomillae

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

Relevant identified uses:	Laboratory chemical Laboratory and analytical use
Uses advised against:	Do not use for products which come into contact with foodstuffs. Do not use for private purposes (household).

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone:+49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet:	:Department Health, Safety and Environment
e-mail (competent person):	**sicherheit@carlroth.de**

1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
NSW Poisons Information Centre Childrens Hospital	Hawkesbury Road	2145 West-mead, NSW	131126	

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS

Section	Hazard class	Cat-egory	Hazard class and category	Hazard statement
2.6	Flammable liquid	3	Flam. Liq. 3	H226
3.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	Serious eye damage/eye irritation	1	Eye Dam. 1	H318
3.4S	Skin sensitisation	1	Skin Sens. 1	H317
3.10	Aspiration hazard	1	Asp. Tox. 1	H304

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources.

2.2 Label elements

Labelling

Signal word **Danger**

Pictograms

GHS02, GHS05, GHS07, GHS08

Hazard statements

H226	Flammable liquid and vapour
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

Precautionary statements

Precautionary statements - prevention

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking
P280	Wear protective gloves

Precautionary statements - response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P302+P352	IF ON SKIN: Wash with plenty of soap and 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
P331	Do NOT induce vomiting
P370+P378	In case of fire: Use sand, carbon dioxide or powder extinguisher for extinction

Precautionary statements - storage

P403+P235	Store in a well-ventilated place. Keep cool

Hazardous ingredients for labelling: DL-α-Pinene, Bisabolene, D-(+)-Limonene, Myrcene, Terpinolene, DL-Limonene, β-Caryophyllene, ß-Pinene

2.3 Other hazards

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 3: Composition/information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of sub-stance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
Benzyl alcohol	CAS No 100-51-6	25 – 50	Acute Tox. 4 / H302 Acute Tox. 4 / H332 Eye Irrit. 2A / H319		
DL-α-Pinene	CAS No 80-56-8	10 – 25	Flam. Liq. 3 / H226 Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Skin Sens. 1A / H317 Asp. Tox. 1 / H304		
Bisabolene	CAS No 495-62-5	5 – < 10	Skin Irrit. 2 / H315 Skin Sens. 1 / H317 Asp. Tox. 1 / H304		
β-Farnesene	CAS No 18794-84-8	1 – < 5	Asp. Tox. 1 / H304		
Myrcene	CAS No 123-35-3	1 – < 5	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Eye Irrit. 2A / H319 Skin Sens. 1 / H317 Asp. Tox. 1 / H304		IARC: 2B
D-(+)-Limonene	CAS No 5989-27-5	1 – < 5	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Skin Sens. 1B / H317 Asp. Tox. 1 / H304		
α-Terpineol	CAS No 98-55-5	1 – < 5	Flam. Liq. 4 / H227 Skin Irrit. 2 / H315 Eye Irrit. 2A / H319		
ß-Pinene	CAS No 127-91-3	< 1	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Skin Sens. 1B / H317 Asp. Tox. 1 / H304		
DL-Limonene	CAS No 138-86-3	< 1	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Skin Sens. 1 / H317		C(a)
Terpinolene	CAS No 586-62-9	< 1	Flam. Liq. 4 / H227 Skin Sens. 1B / H317 Asp. Tox. 1 / H304		
β-Caryophyllene	CAS No 87-44-5	< 1	Skin Sens. 1 / H317 Asp. Tox. 1 / H304		

Notes

C(a): Mixture of isomers
IARC 2B: IARC group 2B: possibly carcinogenic to humans (International Agency for Research on Cancer)

For full text of abbreviations: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. After contact with skin, wash immediately with plenty of water. In case of skin reactions, consult a physician. In case of skin irritation, consult a physician.

Following eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist.

Following ingestion

Call a physician immediately. Observe aspiration hazard if vomiting occurs.

4.2 Most important symptoms and effects, both acute and delayed

Aspiration hazard, Vomiting, Risk of blindness, Risk of serious damage to eyes, Irritation, Allergic reactions

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings
water spray, dry extinguishing powder, BC-powder, carbon dioxide (CO_2)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Combustible. In case of insufficient ventilation and/or in use, may form flammable/explosive vapour-air mixture. Solvent vapours are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapours may form explosive mixtures with air.

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO_2), May produce toxic fumes of carbon monoxide if burning.

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray. Avoidance of ignition sources.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Danger of explosion.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provision of sufficient ventilation.

Measures to prevent fire as well as aerosol and dust generation

Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice:

Ground/bond container and receiving equipment.

Ventilation requirements

Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

This information is not available.

Relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DL-α-Pinene	80-56-8	DNEL	3.8 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
DL-α-Pinene	80-56-8	DNEL	0.542 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
D-(+)-Limonene	5989-27-5	DNEL	66.7 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
D-(+)-Limonene	5989-27-5	DNEL	9.5 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
β-Farnesene	18794-84-8	DNEL	0.95 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
ß-Pinene	127-91-3	DNEL	5.69 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
ß-Pinene	127-91-3	DNEL	0.8 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
ß-Pinene	127-91-3	DNEL	54 µg/cm²	human, dermal	worker (industry)	chronic - local effects

Relevant PNECs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
DL-α-Pinene	80-56-8	PNEC	0.606 µg/l	aquatic organisms	freshwater	short-term (single instance)
DL-α-Pinene	80-56-8	PNEC	0.061 µg/l	aquatic organisms	marine water	short-term (single instance)
DL-α-Pinene	80-56-8	PNEC	0.2 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
DL-α-Pinene	80-56-8	PNEC	157 µg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
DL-α-Pinene	80-56-8	PNEC	15.7 µg/kg	aquatic organisms	marine sediment	short-term (single instance)
DL-α-Pinene	80-56-8	PNEC	31.7 µg/kg	terrestrial organisms	soil	short-term (single instance)
D-(+)-Limonene	5989-27-5	PNEC	14 µg/l	aquatic organisms	freshwater	short-term (single instance)
D-(+)-Limonene	5989-27-5	PNEC	1.4 µg/l	aquatic organisms	marine water	short-term (single instance)
D-(+)-Limonene	5989-27-5	PNEC	1.8 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
D-(+)-Limonene	5989-27-5	PNEC	3.85 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
D-(+)-Limonene	5989-27-5	PNEC	0.385 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
D-(+)-Limonene	5989-27-5	PNEC	0.763 mg/kg	terrestrial organisms	soil	short-term (single instance)
α-Terpineol	98-55-5	PNEC	68 µg/l	aquatic organisms	freshwater	short-term (single instance)
α-Terpineol	98-55-5	PNEC	6.8 µg/l	aquatic organisms	marine water	short-term (single instance)
α-Terpineol	98-55-5	PNEC	2.6 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
α-Terpineol	98-55-5	PNEC	1.85 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
α-Terpineol	98-55-5	PNEC	0.185 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
α-Terpineol	98-55-5	PNEC	0.329 mg/kg	terrestrial organisms	soil	short-term (single instance)
ß-Pinene	127-91-3	PNEC	1.004 µg/l	aquatic organisms	freshwater	short-term (single instance)

Relevant PNECs of components of the mixture						
Name of sub-stance	**CAS No**	**End-point**	**Threshold level**	**Organism**	**Environmental compartment**	**Exposure time**
ß-Pinene	127-91-3	PNEC	0.1 $^{\mu g}/_{l}$	aquatic organ-isms	marine water	short-term (single instance)
ß-Pinene	127-91-3	PNEC	3.26 $^{mg}/_{l}$	aquatic organ-isms	sewage treatment plant (STP)	short-term (single instance)
ß-Pinene	127-91-3	PNEC	0.337 $^{mg}/_{kg}$	aquatic organ-isms	freshwater sedi-ment	short-term (single instance)
ß-Pinene	127-91-3	PNEC	0.034 $^{mg}/_{kg}$	aquatic organ-isms	marine sediment	short-term (single instance)
ß-Pinene	127-91-3	PNEC	0.067 $^{mg}/_{kg}$	terrestrial organ-isms	soil	short-term (single instance)

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection

Use safety goggle with side protection.

Skin protection

• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves. The times are approximate values from measurements at 22 ° C and permanent contact. Increased temperatures due to heated substances, body heat etc. and a reduction of the effective layer thickness by stretching can lead to a considerable reduction of the breakthrough time. If in doubt, contact manufacturer. At an approx. 1.5 times larger / smaller layer thickness, the respective breakthrough time is doubled / halved. The data apply only to the pure substance. When transferred to substance mixtures, they may only be considered as a guide.

• type of material

Butyl caoutchouc (butyl rubber)

• material thickness

0,5 mm

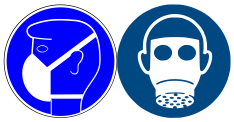
• breakthrough times of the glove material

>480 minutes (permeation: level 6)

• other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection



Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C , colour code: Brown).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	greenish-blue
Odour	characteristic
Melting point/freezing point	-15.4 °C (data apply to the main component)
Boiling point or initial boiling point and boiling range	205.3 °C at 1,013 hPa (data apply to the main component)
Flammability	flammable liquid in accordance with GHS criteria
Lower and upper explosion limit	1.3 vol% (LEL) - 13 vol% (UEL) (data apply to the main component)
Flash point	51 °C
Auto-ignition temperature	436 °C (data apply to the main component)
Decomposition temperature	not relevant
pH (value)	not determined
Kinematic viscosity	not determined
Solubility(ies)	
Water solubility	not determined
Partition coefficient	
Partition coefficient n-octanol/water (log value):	this information is not available
Vapour pressure	0.07 hPa at 20 °C
Density and/or relative density	
Density	0.95 $^{g}/_{cm^3}$ at 20 °C
Relative vapour density	information on this property is not available
Particle characteristics	not relevant (liquid)

Other safety parameters

Oxidising properties	none

9.2 Other information

Information with regard to physical hazard classes:	There is no additional information.
Other safety characteristics:	There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

The mixture contains reactive substance(s). Risk of ignition.

If heated

Risk of ignition. Vapours may form explosive mixtures with air.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to GHS

Acute toxicity

Shall not be classified as acutely toxic.

GHS of the United Nations, annex 4. May be harmful if inhaled.

Acute toxicity estimate (ATE) of components of the mixture

Name of substance	CAS No	Exposure route	ATE
Benzyl alcohol	100-51-6	oral	1,580 $^{mg}/_{kg}$
Benzyl alcohol	100-51-6	inhalation: vapour	11 $^{mg}/_{l}$/4h

Acute toxicity estimate (ATE) of components of the mixture			
Name of substance	**CAS No**	**Exposure route**	**ATE**
Benzyl alcohol	100-51-6	inhalation: dust/mist	>4.178 $^{mg}/_{l}$/4h
DL-α-Pinene	80-56-8	oral	1,000 $^{mg}/_{kg}$

Acute toxicity of components of the mixture					
Name of substance	**CAS No**	**Exposure route**	**Endpoint**	**Value**	**Species**
Benzyl alcohol	100-51-6	oral	LD50	1,580 $^{mg}/_{kg}$	mouse
Benzyl alcohol	100-51-6	inhalation: dust/mist	LC50	>4,178 $^{mg}/_{m^3}$/ 4h	rat
DL-α-Pinene	80-56-8	dermal	LD50	>2,000 $^{mg}/_{kg}$	rat
DL-α-Pinene	80-56-8	oral	LD50	3,700 $^{mg}/_{kg}$	rat
D-(+)-Limonene	5989-27-5	oral	LD50	>2,000 $^{mg}/_{kg}$	rat
α-Terpineol	98-55-5	oral	LD50	4,300 $^{mg}/_{kg}$	rat
α-Terpineol	98-55-5	dermal	LD50	>2,000 $^{mg}/_{kg}$	rat
β-Farnesene	18794-84-8	inhalation: dust/mist	LC50	>2.06 $^{mg}/_{l}$/4h	rat
β-Farnesene	18794-84-8	dermal	LD50	>5,000 $^{mg}/_{kg}$	rabbit
Myrcene	123-35-3	oral	LD50	>3,380 $^{mg}/_{kg}$	mouse
Myrcene	123-35-3	dermal	LD50	>5,000 $^{mg}/_{kg}$	rabbit
Terpinolene	586-62-9	oral	LD50	>2,000 $^{mg}/_{kg}$	rat
Terpinolene	586-62-9	dermal	LD50	>2,000 $^{mg}/_{kg}$	rat
DL-Limonene	138-86-3	oral	LD50	5,300 $^{mg}/_{kg}$	rat
β-Caryophyllene	87-44-5	oral	LD50	>5,000 $^{mg}/_{kg}$	mouse
ß-Pinene	127-91-3	oral	LD50	4,700 $^{mg}/_{kg}$	rat

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

aspiration hazard

• If in eyes

Causes serious eye damage, risk of blindness

• If inhaled

Data are not available.

• If on skin

causes skin irritation, May produce an allergic reaction, pruritis, localised redness

• Other information

none

11.2 Endocrine disrupting properties

None of the ingredients are listed.

SECTION 12: Ecological information

12.1 Toxicity

Very toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture

Name of sub-stance	CAS No	Endpoint	Value	Species	Exposure time
Benzyl alcohol	100-51-6	LC50	460 $^{mg}/_{l}$	fish	96 h
Benzyl alcohol	100-51-6	EC50	230 $^{mg}/_{l}$	aquatic invertebrates	48 h
Benzyl alcohol	100-51-6	ErC50	770 $^{mg}/_{l}$	algae	72 h
DL-α-Pinene	80-56-8	LC50	0.303 $^{mg}/_{l}$	fish	96 h
DL-α-Pinene	80-56-8	EC50	0.475 $^{mg}/_{l}$	aquatic invertebrates	48 h
D-(+)-Limonene	5989-27-5	LC50	0.46 $^{mg}/_{l}$	fish	96 h
D-(+)-Limonene	5989-27-5	EC50	0.307 $^{mg}/_{l}$	aquatic invertebrates	48 h
D-(+)-Limonene	5989-27-5	ErC50	0.32 $^{mg}/_{l}$	algae	72 h
α-Terpineol	98-55-5	LC50	70 $^{mg}/_{l}$	fish	96 h
α-Terpineol	98-55-5	EC50	73 $^{mg}/_{l}$	aquatic invertebrates	48 h
α-Terpineol	98-55-5	ErC50	68 $^{mg}/_{l}$	algae	72 h

Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Myrcene	123-35-3	EC50	1.47 mg/l	aquatic invertebrates	48 h
Myrcene	123-35-3	EC50	0.31 mg/l	algae	72 h
Myrcene	123-35-3	ErC50	0.342 mg/l	algae	72 h
Terpinolene	586-62-9	LC50	0.805 mg/l	fish	96 h
Terpinolene	586-62-9	EC50	0.634 mg/l	aquatic invertebrates	48 h
Terpinolene	586-62-9	ErC50	0.692 mg/l	algae	72 h
DL-Limonene	138-86-3	EC50	17 mg/l	daphnia magna	48 h
DL-Limonene	138-86-3	LC50	80 mg/l	rainbow trout (Oncorhynchus mykiss)	96 h
β-Caryophyllene	87-44-5	EC50	>0.17 mg/l	daphnia magna	48 h
β-Caryophyllene	87-44-5	ErC50	>0.033 mg/l	algae	72 h
ß-Pinene	127-91-3	LC50	0.68 mg/l	rainbow trout (Oncorhynchus mykiss)	96 h
ß-Pinene	127-91-3	EC50	1.09 mg/l	daphnia magna	48 h
ß-Pinene	127-91-3	ErC50	0.7 mg/l	Pseudokirchneriella subcapitata	72 h

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Benzyl alcohol	100-51-6	LC50	770 mg/l	fish	1 h
Benzyl alcohol	100-51-6	EC50	66 mg/l	aquatic invertebrates	21 d
D-(+)-Limonene	5989-27-5	EC50	<0.67 mg/l	fish	8 d
D-(+)-Limonene	5989-27-5	EC50	188 µg/l	aquatic invertebrates	21 d
β-Farnesene	18794-84-8	EC50	>1,000 mg/l	microorganisms	3 h
Terpinolene	586-62-9	EC50	69 mg/l	microorganisms	3 h
ß-Pinene	127-91-3	EC50	326 mg/l	microorganisms	3 h

12.2 Persistence and degradability

Degradability of components of the mixture

Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
Benzyl alcohol	100-51-6	oxygen depletion	92 – 96 %	14 d		ECHA
Benzyl alcohol	100-51-6	DOC removal	95 %	21 d		ECHA

Degradability of components of the mixture						
Name of substance	**CAS No**	**Process**	**Degradation rate**	**Time**	**Method**	**Source**
DL-α-Pinene	80-56-8	oxygen depletion	68 %	28 d		ECHA
D-(+)-Limonene	5989-27-5	carbon dioxide generation	58.8 %	14 d		ECHA
D-(+)-Limonene	5989-27-5	oxygen depletion	80 %	28 d		ECHA
α-Terpineol	98-55-5	carbon dioxide generation	80 %	28 d	OECD Guideline 310	
β-Farnesene	18794-84-8	carbon dioxide generation	60.6 %	28 d		ECHA
Myrcene	123-35-3	oxygen depletion	76 %	28 d		ECHA
Terpinolene	586-62-9	oxygen depletion	81 %	28 d		ECHA
β-Caryophyllene	87-44-5	oxygen depletion	10 %	28 d		ECHA
ß-Pinene	127-91-3	oxygen depletion	76 %	28 d		ECHA

12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components of the mixture				
Name of substance	**CAS No**	**BCF**	**Log KOW**	**BOD5/COD**
Benzyl alcohol	100-51-6		1 (20 °C)	
DL-α-Pinene	80-56-8		4.83	
D-(+)-Limonene	5989-27-5		4.38 (pH value: 7.2, 37 °C)	
α-Terpineol	98-55-5		2.98	
β-Farnesene	18794-84-8		>6.5 (pH value: 7.7, 30 °C)	
Myrcene	123-35-3		4.82 (pH value: ~6.5, 30 °C)	
Terpinolene	586-62-9		4.47	
DL-Limonene	138-86-3		4.57	
β-Caryophyllene	87-44-5		6.23 (pH value: 7, 25 °C)	

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

None of the ingredients are listed.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

Relevant provisions relating to waste(Basel Convention)

Properties of waste which render it hazardous

H3 Flammable liquids
H11 Toxic (Delayed or chronic)

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number

UN RTDG	UN 1993
IMDG-Code	UN 1993
ICAO-TI	UN 1993

14.2 UN proper shipping name

UN RTDG	FLAMMABLE LIQUID, N.O.S.
IMDG-Code	FLAMMABLE LIQUID, N.O.S.
ICAO-TI	Flammable liquid, n.o.s.
Technical name (hazardous ingredients)	DL-α-Pinene, Camphene

14.3 Transport hazard class(es)

UN RTDG	3
IMDG-Code	3
ICAO-TI	3

14.4 Packing group

UN RTDG	III
IMDG-Code	III

ICAO-TI	III
14.5 Environmental hazards	hazardous to the aquatic environment
Environmentally hazardous substance (aquatic environment):	DL-α-Pinene

14.6 Special precautions for user

There is no additional information.

14.7 Transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Transport informationNational regulationsAdditional information(UN RTDG)

UN number	1993
Class	3
Environmental hazards	Yes Hazardous to the aquatic environment
Packing group	III
Danger label(s)	3 Fish and tree

Special provisions (SP)	223, 274 UN RTDG
Excepted quantities (EQ)	E1 UN RTDG
Limited quantities (LQ)	5 L UN RTDG
Emergency Action Code	3Y

International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name	FLAMMABLE LIQUID, N.O.S.
Particulars in the shipper's declaration	UN1993, FLAMMABLE LIQUID, N.O.S., (contains: DL-α-Pinene, Camphene), 3, III, 51°C c.c., MARINE POLLUTANT
Marine pollutant	yes (hazardous to the aquatic environment), (DL-α-Pinene)
Danger label(s)	3, "Fish and tree"

Special provisions (SP)	223, 274, 955
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
EmS	F-E, S-E
Stowage category	A

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Proper shipping name	Flammable liquid, n.o.s.
Particulars in the shipper's declaration	UN1993, Flammable liquid, n.o.s., (contains: DL-α-Pinene, Camphene), 3, III
Environmental hazards	yes (hazardous to the aquatic environment)
Danger label(s)	3

Special provisions (SP)	A3
Excepted quantities (EQ)	E1
Limited quantities (LQ)	10 L

SECTION 15: Regulatory information

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

There is no additional information.

National regulations(Australia)

Australian Inventory of Chemical Substances(AICS)

All ingredients are listed or exempt from listing.

Other information

Directive 94/33/EC on the protection of young people at work. Observe employment restrictions under the Maternity Protection Directive (92/85/EEC) for expectant or nursing mothers.

National inventories

Country	Inventory	Status
AU	AIIC	all ingredients are listed
CA	DSL	all ingredients are listed
CN	IECSC	all ingredients are listed
EU	ECSI	all ingredients are listed
EU	REACH Reg.	not all ingredients are listed
JP	CSCL-ENCS	not all ingredients are listed
JP	ISHA-ENCS	not all ingredients are listed
KR	KECI	not all ingredients are listed
MX	INSQ	not all ingredients are listed
NZ	NZIoC	not all ingredients are listed
PH	PICCS	all ingredients are listed
TR	CICR	not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	not all ingredients are listed

Legend

AIIC	Australian Inventory of Industrial Chemicals
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
ISHA-ENCS	Inventory of Existing and New Chemical Substances (ISHA-ENCS)
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
14.1	UN RTDG: UN 1169	UN RTDG: UN 1993	yes
14.1	IMDG-Code: UN 1169	IMDG-Code: UN 1993	yes
14.1	ICAO-TI: UN 1169	ICAO-TI: UN 1993	yes
14.2	UN RTDG: EXTRACTS, AROMATIC, LIQUID	UN RTDG: FLAMMABLE LIQUID, N.O.S.	yes
14.2	IMDG-Code: EXTRACTS, AROMATIC, LIQUID	IMDG-Code: FLAMMABLE LIQUID, N.O.S.	yes
14.2	ICAO-TI: Extracts, aromatic, liquid	ICAO-TI: Flammable liquid, n.o.s.	yes
14.2		Technical name (hazardous ingredients): DL-α-Pinene, Camphene	yes
14.8	UN number: 1169	UN number: 1993	yes
14.8	Special provisions (SP): 223 UN RTDG	Special provisions (SP): 223, 274 UN RTDG	yes
14.8		Emergency Action Code: 3Y	yes
14.8	Proper shipping name: EXTRACTS, AROMATIC, LIQUID	Proper shipping name: FLAMMABLE LIQUID, N.O.S.	yes
14.8	Particulars in the shipper's declaration: UN1169, EXTRACTS, AROMATIC, LIQUID, 3, III, 51°C c.c., MARINE POLLUTANT	Particulars in the shipper's declaration: UN1993, FLAMMABLE LIQUID, N.O.S., (contains: DL-α-Pinene, Camphene), 3, III, 51°C c.c., MARINE POLLUTANT	yes
14.8	Special provisions (SP): 223, 955	Special provisions (SP): 223, 274, 955	yes
14.8	EmS: F-E, S-D	EmS: F-E, S-E	yes

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relev-ant
14.8	Proper shipping name: Extracts, aromatic, liquid	Proper shipping name: Flammable liquid, n.o.s.	yes
14.8	Particulars in the shipper's declaration: UN1169, Extracts, aromatic, liquid, 3, III	Particulars in the shipper's declaration: UN1993, Flammable liquid, n.o.s., (contains: DL-α-Pinene, Camphene), 3, III	yes
15.1		National inventories: change in the listing (table)	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
Acute Tox.	Acute toxicity
Asp. Tox.	Aspiration hazard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
COD	Chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code

Abbr.	Descriptions of used abbreviations
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
LEL	Lower explosion limit (LEL)
log KOW	n-Octanol/water
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
Skin Sens.	Skin sensitisation
UEL	Upper explosion limit (UEL)
UN RTDG	UN Recommendations on the Transport of Dangerous Good
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Safe Work Australia's Code of Practice for Labelling of Workplace Hazardous Chemicals (under WHS Regulations).

UN Recommendations on the Transport of Dangerous Good. International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties. The classification is based on tested mixture.
Health hazards. Environmental hazards. The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in section 2 and 3)

Code	Text
H226	Flammable liquid and vapour.
H227	Combustible liquid.
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.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.