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

1.1. Product identifier

Cinnamomi zeylanici folii aeth. / Solmer
Item No. 01416000

Substance / product identification

CAS-No.	8015-91-6
EINECS-No.	283-479-0
INCI	CINNAMOMUM ZEYLANICUM LEAF OIL
REACH Registry No.	01-2119487278-23

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

Use of the substance/preparation

flavour/ fragrance

1.3. Details of the supplier of the safety data sheet

Address/Manufacturer

Hänseler AG
Industriestrasse 35
9100 Herisau

Telephone no.	0041 (0)71 353 58 58
E-mail address of person responsible for this SDS	sdb@haenseler.ch

1.4. Emergency telephone number

Switzerland :145 / Abroad +41 (0)44 251 51 51

SECTION 2: Hazards identification ***

2.1. Classification of the substance or mixture

Classification (Regulation (EC) No. 1272/2008)

Classification (Regulation (EC) No. 1272/2008)

Skin Irrit. 2	H315
Eye Irrit. 2	H319
Skin Sens. 1A	H317
Muta. 2	H341
Carc. 1B	H350
Aquatic Chronic 2	H411

The product is classified and labelled in accordance with Regulation (EC) No 1272/2008
For explanation of abbreviations see section 16.

2.2. Label elements

Labelling according to regulation (EC) No 1272/2008

Hazard pictograms ***

Signal word

Danger

Hazard statements *

H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

P201	Obtain special instructions before use.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF expsoed or concerned: Get medicinal advice/attention.

Hazardous component(s) to be indicated on label (Regulation (EC) No. 1272/2008)

contains *** 3,7-Dimethyl-1,6-octadien-3-ol; Cinnamaldehyde ; Eugenol; cinnamyl alcohol; coumarin; isoeugenol; dipentene; citral; (1R)-alpha-Pinene; Farnesol; safrole

Supplemental information

Further supplemental information

Restricted to professional users

Other information

Not for supply to the general public in Switzerland

2.3. Other hazards

The product contains no PBT substances. The product contains no vPvB substances. This product does not contain a substance that has endocrine disrupting properties with respect to human. The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

SECTION 3: Composition/information on ingredients ***

Hazardous ingredients *

Eugenol

CAS No.	97-53-0				
EINECS no.	202-589-1				
Concentration	>=	50			%
Classification (Regulation (EC) No. 1272/2008)					
	Skin Sens. 1B	H317			
	Eye Irrit. 2	H319			

3,7-Dimethyl-1,6-octadien-3-ol

CAS No.	78-70-6				
EINECS no.	201-134-4				
Concentration	>=	1	<	10	%
Classification (Regulation (EC) No. 1272/2008)					
	Skin Irrit. 2	H315			
	Eye Irrit. 2	H319			
	Skin Sens. 1B	H317			

citral

CAS No. 5392-40-5

EINECS no. 226-394-6
Concentration >= 1 < 5.9 %
Classification (Regulation (EC) No. 1272/2008)
Skin Irrit. 2 H315
Eye Irrit. 2 H319
Skin Sens. 1 H317

ATE oral 345 mg/kg

benzyl benzoate
CAS No. 120-51-4
EINECS no. 204-402-9
Registration no. 01-2119976371-33-0006
Concentration >= 2.5 < 5.9 %
Classification (Regulation (EC) No. 1272/2008)
Acute Tox. 4 H302
Aquatic Acute 1 H400
Aquatic Chronic 2 H411

ATE oral 1’500 mg/kg

4-allyl-2-methoxyphenyl acetate
CAS No. 93-28-7
EINECS no. 202-235-6
Concentration >= 1 < 3.5 %
Classification (Regulation (EC) No. 1272/2008)
Acute Tox. 4 H302

ATE oral 1’670 mg/kg

Cinnamaldehyde
CAS No. 104-55-2
EINECS no. 203-213-9
Concentration >= 1 < 10 %
Classification (Regulation (EC) No. 1272/2008)
Acute Tox. 4 H312
Skin Irrit. 2 H315
Skin Sens. 1 H317
Eye Irrit. 2 H319

cATpE dermal 1’100 mg/kg

cinnamyl alcohol
CAS No. 104-54-1
EINECS no. 203-212-3
Concentration >= 1 < 10 %
Classification (Regulation (EC) No. 1272/2008)
Skin Sens. 1 H317
Skin Irrit. 2 H315

(1R)-alpha-Pinene
CAS No. 7785-70-8
EINECS no. 232-087-8
Concentration >= 1 < 2.3 %
Classification (Regulation (EC) No. 1272/2008)
Flam. Liq. 3 H226
Asp. Tox. 1 H304
Skin Irrit. 2 H315
Skin Sens. 1 H317

Aquatic Acute 1	H400	
Aquatic Chronic 1	H410	

ATE	oral	500	mg/kg

dipentene

CAS No.	138-86-3				
EINECS no.	205-341-0				
Concentration	>=	1	<	2.5	%

Classification (Regulation (EC) No. 1272/2008)

Flam. Liq. 3	H226
Skin Irrit. 2	H315
Skin Sens. 1	H317
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Additional remarks:

CLP Regulation (EC) No 1272/2008, Annex VI, Note C

safrole

CAS No.	94-59-7				
EINECS no.	202-345-4				
Concentration	>=	1	<	1.4	%

Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 4	H302
Muta. 2	H341
Carc. 1B	H350

cATpE	oral	500	mg/kg

p-Isopropyl toluene

CAS No.	99-87-6				
EINECS no.	202-796-7				
Concentration	>=	1	<	2.5	%

Classification (Regulation (EC) No. 1272/2008)

Flam. Liq. 3	H226
Acute Tox. 3	H331
Asp. Tox. 1	H304
Aquatic Chronic 2	H411

cATpE	inhalative, Dust/Mist	0.5	mg/l
cATpE	inhalative, Vapors	3	mg/l

coumarin

CAS No.	91-64-5				
EINECS no.	202-086-7				
Concentration	>=	0.1	<	1	%

Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 4	H302
Skin Sens. 1	H317
Aquatic Chronic 3	H412

isoeugenol

CAS No.	97-54-1				
EINECS no.	202-590-7				
Concentration	>=	0.1	<	1	%

Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 4	H312
Acute Tox. 4	H302

Skin Irrit. 2	H315
Eye Irrit. 2	H319
Skin Sens. 1A	H317

Farnesol

CAS No. 4602-84-0
EINECS no. 225-004-1
Concentration >= 0.1 < 1 %
Classification (Regulation (EC) No. 1272/2008)

Skin Irrit. 2	H315
Skin Sens. 1	H317
Eye Irrit. 2	H319

Further ingredients

beta-Caryophyllen

CAS No. 87-44-5
EINECS no. 201-746-1
Concentration >= 1 < 10 %
Advice: [4]
Classification (Regulation (EC) No. 1272/2008)

Asp. Tox. 1	H304

Propyphenazone

CAS No. 479-92-5
EINECS no. 207-539-2
Concentration < 1 %
Advice: [4]
Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 4	H302

benzaldehyde

CAS No. 100-52-7
EINECS no. 202-860-4
Concentration < 1 %
Advice: [4]
Classification (Regulation (EC) No. 1272/2008)

Acute Tox. 4	H302
Acute Tox. 4	H332
Eye Irrit. 2	H319
STOT SE 3	H335

p-mentha-1,4(8)-diene

CAS No. 586-62-9
EINECS no. 209-578-0
Concentration < 1 %
[4]
Classification (Regulation (EC) No. 1272/2008)

Asp. Tox. 1	
Flam. Liq. 3	
Aquatic Chronic 2	

Note

[4] Voluntary information

SECTION 4: First aid measures

4.1. Description of first aid measures

After inhalation

Ensure supply of fresh air. If the patient is likely to become unconscious, place and transport in stable sideways position.

After skin contact

Wash off immediately with soap and water and rinse well.

After eye contact

Remove contact lenses. Separate eyelids, wash the eyes thoroughly with water (15 min.).

After ingestion

Do not induce vomiting - aspiration hazard. Seek medical advice immediately.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Carbon dioxide, Dry powder, Foam

5.2. Special hazards arising from the substance or mixture

In the event of fire the following can be released: Carbon monoxide (CO)

5.3. Advice for firefighters

Special protective equipment for fire-fighting

In case of combustion use a suitable breathing apparatus.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Do not inhale vapours. Avoid contact with eyes and skin. Refer to protective measures listed in Sections 7 and 8.

6.2. Environmental precautions

Advise water authority if spillage has entered water course or drainage system. Do not discharge into the drains/surface waters/groundwater.

6.3. Methods and material for containment and cleaning up

Pick up with absorbent material (eg sand, kieselgur, acid binder, universal binder, sawdust). When picked up, treat material as prescribed under Section 13 "Disposal".

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Isolate from sources of heat, sparks and open flame. Smoking, eating and drinking should be prohibited in application area. Wear protective equipment. Provide good ventilation of working area (local exhaust ventilation if necessary).

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep container tightly closed in a well-ventilated place. Keep in a cool place. explosion proof

Hints on storage assembly

Not required.

Storage classes

Storage class according to TRGS 510	6.1C	Combustible substances of acute toxicity, category 3 / hazardous substances that are toxic or produce chronic effects
Storage category (Switzerland)	6.1	Toxic substances

Further information on storage conditions

Keep container tightly closed.

7.3. Specific end use(s)

flavour/ fragrance

SECTION 8: Exposure controls/personal protection ***

8.1. Control parameters

Derived No/Minimal Effect Levels (DNEL/DMEL)

benzyl benzoate

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	5.1	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Acute	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	102	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	2.6	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	0.4	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	1.25	mg/m³

Type of value	Derived No Effect Level (DNEL)
Reference group	Consumer

Duration of exposure	Acute	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	25	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Consumer	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	1.3	mg/kg/d

Predicted No Effect Concentration (PNEC)

benzyl benzoate

Type of value	PNEC	
Type	Freshwater	
Concentration	0.017	mg/l

Type of value	PNEC	
Type	Freshwater sediment	
Concentration	10.66	mg/kg

Type of value	PNEC	
Type	Saltwater	
Concentration	0.00168	mg/l

Type of value	PNEC	
Type	Marine sediment	
Concentration	1.07	mg/kg

Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	100	mg/l

Type of value	PNEC	
Type	Soil	
Concentration	2.12	mg/kg

8.2. Exposure controls

General protective and hygiene measures

Keep away from food-stuffs, beverages and feed-stocks. Take off immediately all contaminated clothing. Wash hands before breaks and after work. Avoid contact with skin. Avoid contact with eyes.

Respiratory protection

Provide good ventilation of working area (local exhaust ventilation if necessary).

Hand protection

Chemical resistant gloves

Appropriate Material Ansell Barrier 02-100

Eye protection

Tightly fitting safety glasses

Body protection

Protective clothing

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state liquid

Colour clear yellow to red

Odour characteristic

Melting point

Remarks not determined

Boiling point or initial boiling point and boiling range

Remarks not determined

Flammability

Not applicable

Flash point

Value 88 °C

pH value

Remarks not determined

Partition coefficient n-octanol/water (log value)

Remarks not determined

Density and/or relative density

Value 1.0300 to 1.0590 g/cm³

Remarks Relative Density according specification

Relative vapour density

Remarks not determined

9.2. Other information

Odour threshold

Remarks not determined

Solubility in water

Remarks Immiscible resp. little miscible.

Other information

The product is not dangerous for explosions.

SECTION 10: Stability and reactivity

10.1. Reactivity

No decomposition if stored and applied as directed.

10.2. Chemical stability

Stable under recommended storage and handling conditions (see section 7).

10.3. Possibility of hazardous reactions

No hazardous reactions known.

10.4. Conditions to avoid

Heat

10.5. Incompatible materials

Reactions with acids, alkalies and oxidizing agents.

10.6. Hazardous decomposition products

None known

SECTION 11: Toxicological information

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

Acute oral toxicity

ATE	3'842.82 92	mg/kg
Method	calculated value (Regulation (EC) No. 1272/2008)	

Acute oral toxicity (Components)

Eugenol

Species	rat	
LD50	> 2000	mg/kg
Method	OECD 423	

Eugenol

Species	rat	
LDLo	800	mg/kg
Remarks	intraperitoneal	

Propyphenazone

Species	rat	
LD50	860	mg/kg

beta-Caryophyllen

Species	rat	
LD	> 48	mg/kg
Source	Intratracheal (RTECS)	

4-allyl-2-methoxyphenyl acetate

Species	rat	
LD50	1670	mg/kg

4-allyl-2-methoxyphenyl acetate

Species	rat	
LDLo	48	mg/kg
Source	Intratracheal (RTECS)	

Farnesol

Species	rat	
LD50	6000	mg/kg

citral

Species	Rats (male/female)	
LD50	6800	mg/kg

citral

Species	rat (female)	
LOAEL	335	mg/kg

citral

Species	rat (male)	
LOAEL	345	mg/kg

benzyl benzoate

Species	rat	
LD50	1500	mg/kg

(1R)-alpha-Pinene

Species	rat	
LD50	3700	mg/kg

(1R)-alpha-Pinene

Species	mouse	
LD	> 500	mg/kg

Remarks	intraperitoneal		

Acute dermal toxicity

ATE	>	10’000	mg/kg
Method	calculated value (Regulation (EC) No. 1272/2008)		

Acute dermal toxicity (Components)

beta-Caryophyllen

Remarks	No data available.		

Eugenol

Remarks	No data available.		

4-allyl-2-methoxyphenyl acetate

Species	rabbit		
LD50	>	5000	mg/kg

Farnesol

Remarks	No data available.		

citral

Species	Rats (male/female)		
	>	2000	mg/kg

(1R)-alpha-Pinene

Species	rabbit		
LD50	>	5000	mg/kg

Acute inhalational toxicity

ATE	>	100	mg/l
Administration/Form	Vapors		
Method	calculated value (Regulation (EC) No. 1272/2008)		
ATE	>	20	mg/l
Administration/Form	Dust/Mist		
Method	calculated value (Regulation (EC) No. 1272/2008)		

Acute inhalative toxicity (Components)

Eugenol

Species	rat		
LD	>	2580	mg/m³
Duration of exposure		4 h	

beta-Caryophyllen

Remarks	No data available.		

4-allyl-2-methoxyphenyl acetate

Remarks	No data available.		

Farnesol

Remarks	No data available.		

citral

Remarks	No data available.		

(1R)-alpha-Pinene

Species	rat		
LCLo		625	µg/m³
Source	RTECS: DT7000000		

(1R)-alpha-Pinene

Species	guinea pig		
LCLo		572	µg/m³
Source	RTECS		

Skin corrosion/irritation

Remarks	Irritating to skin.
Remarks	Irritates the mucous membrane.

Skin corrosion/irritation (Components)

beta-Caryophyllen

Species	rabbit	
Duration of exposure	24	h
evaluation	non-irritant	
Method	Draize method	
Source	RTECS	

Eugenol

Species	guinea pig	
Duration of exposure	24	h
evaluation	strongly irritant	
Source	RTECS	
Source	100 mg/ 24h	

Eugenol

Species	rabbit	
Duration of exposure	24	h
evaluation	strongly irritant	
Method	Draize method	
Source	RTECS	
Source	100 mg/ 24 h	

Eugenol

Species	guinea pig	
Duration of exposure	24	h
evaluation	Moderately irritating	
Method	Draize method	

4-allyl-2-methoxyphenyl acetate

Species	rabbit	
Duration of exposure	24	h
evaluation	Moderately irritating	

Farnesol

Remarks	No data available.

citral

Species	rabbit
evaluation	irritant
Remarks	Irritating to skin.

benzyl benzoate

Species	rabbit	
Duration of exposure	4	h
evaluation	Moderately irritating	
Method	OECD 404	

(1R)-alpha-Pinene

Species	Human	
Duration of exposure	15	min
Remarks	Irritating to skin.	
Source	Test mit künstlichem Hautmodell (Episkin)	

(1R)-alpha-Pinene

Species	rabbit	
Duration of exposure	24	h
evaluation	Moderately irritating	
Source	RTECS	

Serious eye damage/irritation

evaluation	strongly irritant

Serious eye damage/irritation (Components)

beta-Caryophyllen

Remarks	No data available.

Eugenol

Species	rabbit
evaluation	irritant

4-allyl-2-methoxyphenyl acetate

Remarks	No data available.

Farnesol

Remarks	No data available.

citral

Species	rabbit
evaluation	irritant
Method	OECD 405
Remarks	Irritates the eyes.

benzyl benzoate

Species	rabbit
evaluation	Moderately irritating
Method	OECD 405

(1R)-alpha-Pinene

Remarks	No data available.

Sensitization

Remarks	May cause sensitization by skin contact.

Sensitization (Components)

beta-Caryophyllen

Remarks	No data available.

Eugenol

Species	mouse
Method	OECD 429
Remarks	May cause allergic skin reactions.

4-allyl-2-methoxyphenyl acetate

Remarks	No data available.

Farnesol

Remarks	No data available.

citral

Species	mouse
evaluation	sensitizing
Method	OECD 429

benzyl benzoate

Species	mouse
evaluation	non-sensitizing
Method	OECD 429

(1R)-alpha-Pinene

Remarks	No data available.

Subacute, subchronic, chronic toxicity (Components)

Farnesol

Remarks	No data available.

benzyl benzoate

Chronic toxicity	
Route of exposure	dermal

Species	Rats (male/female)	
NOAEL	781	mg/kg
Repeated exposure		
Duration of exposure	28 d	

(1R)-alpha-Pinene

Remarks	Not applicable

Mutagenicity

evaluation	Suspected of causing genetic defects.

Mutagenicity (Components)

beta-Caryophyllen

Remarks	No data available.

Eugenol

Species	rat
evaluation	DNA damage

Eugenol

Species	mouse
evaluation	May cause genetic defects.

Eugenol

Species	hamster
evaluation	May cause genetic defects.

4-allyl-2-methoxyphenyl acetate

Remarks	No data available.

Farnesol

Remarks	No data available.

citral

Species	hamster
evaluation	No experimental information on genotoxicity in vitro available.
Remarks	negative

citral

Species	mouse
Remarks	negative

benzyl benzoate

Species	Human
evaluation	No experimental information on genotoxicity in vitro available.
Method	OECD 473

benzyl benzoate

Species	hamster
evaluation	No experimental information on genotoxicity in vitro available.
Method	OECD 476

(1R)-alpha-Pinene

Species	Salmonella typhimurium
Method	Ames test
Remarks	negative

Reproduction toxicity (Components)

beta-Caryophyllen

Remarks	No data available.

Eugenol

Remarks	No data available.

Farnesol

Remarks	No data available.

citral

Remarks No data available.

benzyl benzoate

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

(1R)-alpha-Pinene

Remarks No data available.

Carcinogenicity

evaluation Can cause cancer.

Carcinogenicity (Components)

Eugenol

Species mouse

evaluation Essential points have been found for a possible cancer causing effectsin the experiment on test animals.

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

Source RTECS

4-allyl-2-methoxyphenyl acetate

Remarks No data available.

Farnesol

Remarks No data available.

citral

Remarks No data available.

benzyl benzoate

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

(1R)-alpha-Pinene

Remarks Not applicable

Specific Target Organ Toxicity (STOT) (Components)

beta-Caryophyllen

Remarks Not applicable

Eugenol

Remarks Not applicable

4-allyl-2-methoxyphenyl acetate

Remarks Not applicable

Farnesol

Remarks Not applicable

citral

Remarks Not applicable

benzyl benzoate

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

(1R)-alpha-Pinene

Remarks Not applicable

Aspiration hazard

Harmful: may cause lung damage if swallowed.

Aspiration hazard (Components)

beta-Caryophyllen

Harmful: may cause lung damage if swallowed.

11.2 Information on other hazards

Endocrine disrupting properties with respect to humans

The product does not contain a substance that has endocrine disrupting properties with respect to humans.

SECTION 12: Ecological information ***

12.1. Toxicity

General information

May cause long lasting harmful effects to aquatic life.Do not allow it to reach soil, ground water, water bodies or sewage system.

Fish toxicity (Components)

Eugenol

Species	zebra fish (Brachydanio rerio)		
LC50	13		mg/l
Duration of exposure	96	h	
Method	OECD 203		

beta-Caryophyllen

Remarks No data available.

4-allyl-2-methoxyphenyl acetate

Remarks No data available.

Farnesol

Remarks No data available.

citral

Species	golden orfe (Leuciscus idus)		
LC50	6.78		mg/l
Duration of exposure	96	h	
Method	DIN 38412 T.15		

benzyl benzoate

Species	zebra fish (Brachydanio rerio)		
LC50	2.32		mg/l
Duration of exposure	96	h	
Method	Directive 67/548/EEC, Annex V, C.1.		

(1R)-alpha-Pinene

Remarks No data available.

Daphnia toxicity (Components)

Eugenol

Species	Daphnia		
EC50	1.13		mg/l

beta-Caryophyllen

Remarks No data available.

4-allyl-2-methoxyphenyl acetate

Remarks No data available.

Farnesol

Remarks No data available.

citral

Species	Daphnia magna		
EC50	6.8		mg/l
Duration of exposure	48	h	

benzyl benzoate

Species	Daphnia magna		
EC50	3.09		mg/l
Duration of exposure	48	h	
Method	OECD 201		

benzyl benzoate

Species	Daphnia magna			
NOEC	0.258			mg/l
Duration of exposure	21	d		
Method	OECD 211			

(1R)-alpha-Pinene

Species	Daphnia magna			
EC50	41			mg/l

Algae toxicity (Components)

beta-Caryophyllen

Remarks	No data available.

Eugenol

Remarks	No data available.

4-allyl-2-methoxyphenyl acetate

Remarks	No data available.

Farnesol

Remarks	No data available.

citral

Species	Desmodesmus subspicatus				
EC50			to	103.8	mg/l
Duration of exposure	-	72	h		

benzyl benzoate

Species	Raphidocelis subcapitata		
EC50	0.475		mg/l
Duration of exposure	72	h	
Method	OECD 201		

benzyl benzoate

Species	Raphidocelis subcapitata		
NOEC	0.247		mg/l
Duration of exposure	72	h	
Method	OECD 201		

(1R)-alpha-Pinene

Remarks	No data available.

Bacteria toxicity (Components)

beta-Caryophyllen

Remarks	No data available.

Eugenol

Remarks	No data available.

4-allyl-2-methoxyphenyl acetate

Remarks	No data available.

Farnesol

Remarks	No data available.

citral

Remarks	No data available.

benzyl benzoate

Species	activated sludge			
EC50	>	10000		mg/l
Duration of exposure		3	h	
Method	OECD 209			

(1R)-alpha-Pinene

Remarks	No data available.

12.2. Persistence and degradability

General information

May cause long lasting harmful effects to aquatic life.

Physico-chemical eliminability (Components)

beta-Caryophyllen

Remarks	No data available.

Eugenol

Remarks	No data available.

Farnesol

Remarks	No data available.

citral

Remarks	No data available.

(1R)-alpha-Pinene

Remarks	No data available.

Biodegradability (Components)

beta-Caryophyllen

Remarks	No data available.

Farnesol

Remarks	No data available.

citral

Value	85	to	95	%
evaluation	Readily biodegradable			
Method	OECD 301C			

benzyl benzoate

Value	94.4		%
Duration of test	28	d	
evaluation	Readily biodegradable		
Method	OECD 301		

(1R)-alpha-Pinene

Value	61		%
Duration of test	28	d	
evaluation	Readily biodegradable		
Method	OECD 301 B		
Remarks	The product is biodegradable.		
Source	Kriterium 10 Tage Zeitfenster nicht erfüllt		

Ready degradability (Components)

beta-Caryophyllen

Remarks	No data available.

Farnesol

Remarks	No data available.

citral

(1R)-alpha-Pinene

Remarks	The product is biodegradable.
Source	Kriterium 10 Tage Zeitfenster nicht erfüllt

Chemical oxygen demand (COD) (Components)

Farnesol

Remarks	No data available.

citral

Remarks	No data available.

(1R)-alpha-Pinene

Remarks	No data available.

Biochemical oxygen demand (BOD5) (Components)

Farnesol
Remarks No data available.

citral
Remarks No data available.

(1R)-alpha-Pinene
Remarks No data available.

12.3. Bioaccumulative potential

General information

There is no data available on the product apart from the information given in this subsection.

Partition coefficient n-octanol/water (log value)

Remarks not determined

Octanol/water partition coefficient (log Pow) (Components)

Eugenol
log Pow 2.7

citral
log Pow 2.9
Temperature 25 °C

Bioconcentration factor (BCF) (Components)

Farnesol
Remarks No data available

citral
Remarks No data available

(1R)-alpha-Pinene
Remarks No data available

12.4. Mobility in soil

General information

There is no data available on the product apart from the information given in this subsection.

12.5. Results of PBT and vPvB assessment

General information

May cause long lasting harmful effects to aquatic life.

Results of PBT and vPvB assessment ***

The product contains no PBT substances
The product contains no vPvB substances.

12.6 Endocrine disrupting properties

Endocrine disrupting properties with respect to the envrionment

The product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms.

12.7. Other adverse effects

General information / ecology

Hazard for drinking water supplies. Harmful to aquatic organisms.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations for the product

EWC waste code No not dispose with rubbish.

EWC waste code Should not be released into the sanitary sewer system.

Disposal in compliance with local and national regulations.

SECTION 14: Transport information ***

	Land transport ADR/RID ***	Marine transport IMDG/GGVSee ***	Air transport ICAO/IATA ***
Tunnel restriction code	-		
14.1. UN number	3082	3082	3082
14.2. UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (benzyl benzoate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (benzyl benzoate)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (benzyl benzoate)
14.3. Transport hazard class(es)	9	9	9
Label			
14.4. Packing group	III	III	III
Limited Quantity	5 l		
Transport category	3		
14.5. Environmental hazards	 ENVIRONMENTALLY HAZARDOUS	Marine Pollutant 	 ENVIRONMENTALLY HAZARDOUS

SECTION 15: Regulatory information

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

Water Hazard Class (Germany)

Water Hazard Class (Germany) WGK 3

Remarks Derivation of WGK according to Annex 1 No. 5.2 AwSV

15.2. Chemical safety assessment

For this substance a chemical safety assessment has not been carried out.

SECTION 16: Other information

Hazard statements listed in Chapter 3

H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
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.

CLP categories listed in Chapter 3

Acute Tox. 3	Acute toxicity, Category 3
Acute Tox. 4	Acute toxicity, Category 4
Aquatic Acute 1	Hazardous to the aquatic environment, acute, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic, Category 1
Aquatic Chronic 2	Hazardous to the aquatic environment, chronic, Category 2
Aquatic Chronic 3	Hazardous to the aquatic environment, chronic, Category 3
Asp. Tox. 1	Aspiration hazard, Category 1
Carc. 1B	Carcinogenicity, Category 1B
Eye Irrit. 2	Eye irritation, Category 2
Flam. Liq. 3	Flammable liquid, Category 3
Muta. 2	Germ cell mutagenicity, Category 2
Skin Irrit. 2	Skin irritation, Category 2
Skin Sens. 1	Skin sensitization, Category 1
Skin Sens. 1A	Skin sensitization, Category 1A
Skin Sens. 1B	Skin sensitization, Category 1B

Supplemental information

Relevant changes compared with the previous version of the safety data sheet are marked with: ***
This information is based on our present state of knowledge. However, it should not constitute a guarantee for any specific product properties and shall not establish a legally valid relationship.