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

1.1. Product identifier

Orangen-Aroma 1801 / Ginsana SA

Item No. 01681500

Substance / product identification

UFI ANS7-DSUY-U00G-494V

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)

Flam. Liq. 3	H226
Skin Irrit. 2	H315
Eye Irrit. 2	H319
Skin Sens. 1	H317
Carc. 1B	H350
Asp. Tox. 1	H304
Aquatic Acute 1	H400
Aquatic Chronic 3	H412

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 ***

H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H350	May cause cancer.
H304	May be fatal if swallowed and enters airways.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statements

P201	Obtain special instructions before use.
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor.
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.
P331	Do NOT induce vomiting.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

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

contains *** 3,7-Dimethyl-1,6-octadien-3-ol; citronellal; 7-Methyl-3-methylenocta-1,6-dien; (R)-p-mentha-1,8-diene; citral; citronellol; d-carvone; alpha-Pinene, not specified; beta-Pinene, not specified; (+)-3-Carene, not specified; acetaldehyde

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 ***

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

CAS No. 5989-27-5
EINECS no. 227-813-5
Concentration >= 50 %
Classification (Regulation (EC) No. 1272/2008)

Flam. Liq. 3	H226
Asp. Tox. 1	H304
Skin Irrit. 2	H315
Skin Sens. 1B	H317
Aquatic Acute 1	H400
Aquatic Chronic 3	H412

Concentration limits (Regulation (EC) No. 1272/2008)

Aquatic Acute 1	M = 1

p-menth-1-en-8-ol

CAS No.	98-55-5					
EINECS no.	202-680-6					
Concentration		>=	1	<	10	%
Classification (Regulation (EC) No. 1272/2008)						
	Skin Irrit. 2			H315		
	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	<	10	%
Classification (Regulation (EC) No. 1272/2008)						
	Skin Irrit. 2			H315		
	Eye Irrit. 2			H319		
	Skin Sens. 1			H317		
ATE	oral			345		mg/kg

benzyl alcohol

CAS No.	100-51-6					
EINECS no.	202-859-9					
Registration no.	01-2119492630-38-0021					
Concentration		>=	1	<	10	%
Classification (Regulation (EC) No. 1272/2008)						
	Acute Tox. 4			H302		
	Eye Irrit. 2			H319		
	Acute Tox. 4			H332		
ATE	oral			1’230		mg/kg
ATE	dermal			2’000		mg/kg
cATpE	inhalative, Dust/Mist			1.5		mg/l
cATpE	inhalative, Vapors			11		mg/l

7-Methyl-3-methylenocta-1,6-dien

CAS No.	123-35-3					
EINECS no.	204-622-5					
Concentration		>=	1	<	2.5	%
Classification (Regulation (EC) No. 1272/2008)						
	Flam. Liq. 3			H226		
	Asp. Tox. 1			H304		
	Skin Irrit. 2			H315		
	Eye Irrit. 2			H319		
	Aquatic Acute 1			H400		
	Aquatic Chronic 2			H411		

Concentration limits (Regulation (EC) No. 1272/2008)

M = 1

p-mentha-1,4-diene

CAS No.	99-85-4				
EINECS no.	202-794-6				
Concentration	>=	0.1	<	1	%

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

Flam. Liq. 3	H226
Repr. 2	H361
Aquatic Chronic 2	H411

citronellal

CAS No.	106-23-0				
EINECS no.	203-376-6				
Concentration	>=	0.1	<	1	%

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

Skin Irrit. 2	
Skin Sens. 1	
Flam. Liq. 4	
Aquatic Chronic 2	

citronellol

CAS No.	106-22-9				
EINECS no.	203-375-0				
Concentration	>=	0.1	<	1	%

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

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

d-carvone

CAS No.	99-49-0				
EINECS no.	202-759-5				
Concentration	>=	0.1	<	1	%

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

Skin Sens. 1B	H317

alpha-Pinene, not specified

CAS No.	80-56-8				
EINECS no.	201-291-9				
Concentration	>=	0.25	<	1	%

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

Flam. Liq. 3	H226
Asp. Tox. 1	H304
Skin Irrit. 2	H315
Skin Sens. 1B	H317
Aquatic Acute 1	H400
Aquatic Chronic 1	H410
Acute Tox. 4	H302

Concentration limits (Regulation (EC) No. 1272/2008)

Aquatic Acute 1	M = 1
Aquatic Chronic 1	M = 1

beta-Pinene, not specified

CAS No.	127-91-3
EINECS no.	204-872-5

Concentration >= 0.25 < 1 %
Classification (Regulation (EC) No. 1272/2008)

Flam. Liq. 3	H226
Asp. Tox. 1	H304
Skin Sens. 1	H317
Aquatic Acute 1	H400
Aquatic Chronic 1	H410

Concentration limits (Regulation (EC) No. 1272/2008)

Aquatic Acute 1	M = 1
Aquatic Chronic 1	M = 1

Dodecan-1-ol
CAS No. 112-53-8
EINECS no. 203-982-0
Concentration >= 0.1 < 1 %
Classification (Regulation (EC) No. 1272/2008)

Eye Irrit. 2	H319
Aquatic Acute 1	H400
Aquatic Chronic 2	H411

acetaldehyde
CAS No. 75-07-0
EINECS no. 200-836-8
Concentration >= 0.1 < 1 %
Classification (Regulation (EC) No. 1272/2008)

Flam. Liq. 1	H224
Eye Irrit. 2	H319
Muta. 2	H341
Carc. 1B	H350
STOT SE 3	H335

(+)-3-Carene, not specified
CAS No. 498-15-7
EINECS no. 207-856-6
Concentration >= 0.1 < 0.25 %
Classification (Regulation (EC) No. 1272/2008)

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

Further ingredients ***

Decanal
CAS No. 112-31-2
EINECS no. 203-957-4
Concentration >= 1 < 10 %
Advice: [4]

Octanal
CAS No. 124-13-0
EINECS no. 204-683-8
Concentration >= 1 < 10 %
Advice: [4]

Dodecanal

CAS No.	112-54-9			
EINECS no.	203-983-6			
Concentration		<	1	%

Advice: [4]

Note

[4] Voluntary information

SECTION 4: First aid measures

4.1. Description of first aid measures

General information

Remove affected person from danger area, lay him down.

After inhalation

Remove the casualty into fresh air and keep him calm.

After skin contact

Wash off immediately with soap and water and rinse well. Consult a doctor if skin irritation persists. Remove contaminated, soaked clothing immediately and dispose of safely.

After eye contact

In case of contact with the eyes rinse thoroughly with plenty of water or with an eye-cleaning solution.

After ingestion

Turn a vomiting person lying on his back onto his side. Summon a doctor immediately. Do not induce vomiting.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Water mist, Alcohol-resistant foam, Dry chemical extinguisher, Carbon dioxide

Non suitable extinguishing media

Full water jet

5.3. Advice for firefighters

Special protective equipment for fire-fighting

Use self-contained breathing apparatus.

Other information

Do not inhale explosions- and combustion gases. Cool endangered containers with water spray jet. Fire residues and contaminated fire-fighting water must be disposed of in accordance with the local regulations. Collect contaminated fire-fighting water separately, must not be discharged into the drains.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Wear protective equipment. Keep away sources of ignition.

6.2. Environmental precautions

Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil. In case the product spills into sewage waters, immediately inform the authorities. Suppress gases/vapours/mists with water spray jet.

6.3. Methods and material for containment and cleaning up

Prevent spread over a wide area (by containment with sand or earth).

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

Wear protective equipment

Advice on protection against fire and explosion

Do not smoke. Use explosion-proof equipment/fittings and non-sparking tools. Avoid dust formation. Take action to prevent static discharges. Keep away from sources of ignition.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Keep only in original packaging. Keep tightly closed in a dry and cool place.

Hints on storage assembly

None known

Storage classes

Storage class according to TRGS 510	3	Flammable liquid
Storage category (Switzerland)	3	Flammable liquid

Further information on storage conditions

Protect from heat and direct sunlight. Keep in a cool place. Protect from light.

SECTION 8: Exposure controls/personal protection ***

8.1. Control parameters

Exposure limit values ***

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

List	SUVA			
Type	MAK			
Value	40	mg/m³	7	ppm(V)
Short term exposure limit	80	mg/m³	14	ppm(V)

Pregnancy group: S; Remarks: S SSc; LeberKT AN

benzyl alcohol

List	SUVA			
Type	MAK			
Value	22	mg/m³	5	ppm(V)

Remarks: H SSc; AW; NIOSH

Derived No/Minimal Effect Levels (DNEL/DMEL)

benzyl alcohol

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	110	mg/m³

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	22	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	Worker	
Duration of exposure	Acute	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	40	mg/kg/d

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	8	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	General Population	
Duration of exposure	Acute	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	27	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	General Population	
Duration of exposure	Long term	
Route of exposure	inhalative	
Mode of action	Systemic effects	
Concentration	5.4	mg/m³

Type of value	Derived No Effect Level (DNEL)	
Reference group	General Population	
Duration of exposure	Acute	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	20	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	General Population	
Duration of exposure	Long term	
Route of exposure	dermal	
Mode of action	Systemic effects	
Concentration	4	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	General Population	
Duration of exposure	Acute	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	20	mg/kg/d

Type of value	Derived No Effect Level (DNEL)	
Reference group	General Population	
Duration of exposure	Long term	
Route of exposure	oral	
Mode of action	Systemic effects	
Concentration	4	mg/kg/d

Predicted No Effect Concentration (PNEC)

benzyl alcohol

Type of value	PNEC	
Type	Freshwater	
Concentration	1	mg/l
Type of value	PNEC	
Type	Freshwater sediment	
Concentration	5.27	mg/kg
Type of value	PNEC	
Type	Saltwater	
Concentration	0.1	mg/l
Type of value	PNEC	
Type	Marine sediment	
Concentration	0.527	mg/kg
Type of value	PNEC	
Type	Soil	
Concentration	0.456	mg/kg
Type of value	PNEC	
Type	Sewage treatment plant (STP)	
Concentration	39	mg/l

8.2. Exposure controls

General protective and hygiene measures

Wash hands before breaks and after work. Do not eat, drink or smoke during work time. Avoid contact with skin.

Respiratory protection

Not necessary.

Hand protection

Chemical resistant gloves

Appropriate Material	Butyl rubber		
Breakthrough time	>	480	min

Eye protection

Safety glasses

Body protection

Light protective clothing

SECTION 9: Physical and chemical properties ***

9.1. Information on basic physical and chemical properties

Physical state	liquid, clear
Colour	yellow to orange
Odour	characteristic

Melting point

Remarks not determined

Boiling point or initial boiling point and boiling range

Remarks not determined

Flammability

Flammable.

Flash point

Value	47	°C

Vapour pressure

Value	6	kPa
Temperature	50 °C	
Method	calculated	

Density and/or relative density

Value	0.8540	to	0.8740	g/cm³
Temperature	20 °C			
Remarks	Relative Density according specification			

9.2. Other information

Solubility in water

Remarks	insoluble

Oxidising properties

evaluation	None known

Other information

Forms esplosive mixture with air are possible.

SECTION 10: Stability and reactivity

10.1. Reactivity

No decomposition if stored and applied as directed.

10.2. Chemical stability

No decomposition if stored and applied as directed.

10.3. Possibility of hazardous reactions

No decomposition if stored and applied as directed.

10.4. Conditions to avoid

Keep away from sources of heat and ignition.

10.5. Incompatible materials

No decomposition if stored and applied as directed.

10.6. Hazardous decomposition products

None under normal use.

SECTION 11: Toxicological information

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

Acute oral toxicity

ATE	2’694.55 52	mg/kg
Method	calculated value (Regulation (EC) No. 1272/2008)	

Acute oral toxicity (Components)

7-Methyl-3-methylenocta-1,6-dien

Species	Rats (male/female)		
LD50	>	11390	mg/kg

7-Methyl-3-methylenocta-1,6-dien

Species	Rats (male/female)		
LOAEL		250	mg/kg

citronellol

Species	rat		
LD50		3450	mg/kg

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

Species	rat		
LD50		4400	mg/kg

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

Species	mouse		
NOAEL		1650	mg/kg

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

Species	mouse		
LOAEL		3300	mg/kg

alpha-Pinene, not specified

Species	rat		
		3700	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 alcohol

Species	rat		
LD50		1230	mg/kg
Source	Food and Cosmetics Toxicology. Vol. 2, Pg. 327, 1964.		

benzyl alcohol

Species	rat		
LD50		1620	mg/kg

Acute dermal toxicity

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

Acute dermal toxicity (Components)

7-Methyl-3-methylenocta-1,6-dien

Species	rabbit		
LD50	>	5000	mg/kg

citronellol

Species	rabbit		
LD50		2650	mg/kg

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

Species	rabbit		
LD50	>	5000	mg/kg

alpha-Pinene, not specified

Species	rabbit		
LD50	>	5000	mg/kg

citral

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

benzyl alcohol

Species	rabbit	
LD50	2000	mg/kg
Source	Raw Material Data Handbook, Vol. 1: Organic Solvents, 1974. Vol. 1, Pg. 6, 1974.	

Acute inhalational toxicity

ATE	15.0015	mg/l
Administration/Form	Dust/Mist	
Method	calculated value (Regulation (EC) No. 1272/2008)	
ATE	> 100	mg/l
Administration/Form	Vapors	
Method	calculated value (Regulation (EC) No. 1272/2008)	

Acute inhalative toxicity (Components)

citronellol

Remarks	No data available.

7-Methyl-3-methylenocta-1,6-dien

Remarks	No data available.

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

Remarks	No data available.

citral

Remarks	No data available.

Skin corrosion/irritation (Components)

citronellol

Species	Human	
Duration of exposure	48	h
evaluation	irritant	
Remarks	Irritating to skin.	

7-Methyl-3-methylenocta-1,6-dien

Species	rabbit	
Observation Period	24	h
evaluation	irritant	

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

Species	rabbit	
Duration of exposure	4	h
evaluation	irritant	
Method	OECD 404	

alpha-Pinene, not specified

Species	Human
evaluation	irritant

citral

Species	rabbit
evaluation	irritant
Remarks	Irritating to skin.

benzyl alcohol

Species	rabbit
evaluation	slightly irritant
Method	OECD 404

Serious eye damage/irritation (Components)

citronellol

Remarks	No data available.

7-Methyl-3-methylenocta-1,6-dien

Species	rabbit
evaluation	irritant

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

Species	rabbit
evaluation	non-irritant
Method	OECD 405
Remarks	No effect of irritation known

citral

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

benzyl alcohol

Species	rabbit
Duration of exposure	24 h
evaluation	irritant - risk of serious damage to eyes
Method	OECD 405

Sensitization (Components)

7-Methyl-3-methylenocta-1,6-dien

Species	mouse
evaluation	non-sensitizing
Method	OECD 429

citronellol

Species	mouse
evaluation	sensitizing
Remarks	May cause sensitization by skin contact.

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

Species	mouse
evaluation	sensitizing
Method	OECD 429
Remarks	May cause sensitization by skin contact.

citral

Species	mouse
evaluation	sensitizing
Method	OECD 429

benzyl alcohol

Species	guinea pig
evaluation	non-sensitizing

Subacute, subchronic, chronic toxicity (Components)

citronellol

Remarks	No data available.

7-Methyl-3-methylenocta-1,6-dien

Remarks	Not applicable

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

Remarks	No data available.

Mutagenicity (Components)

citronellol

Remarks	No data available.

7-Methyl-3-methylenocta-1,6-dien

Species	Salmonella typhimurium
evaluation	No mutagenicity in the Ames-test.
Method	Ames test

7-Methyl-3-methylenocta-1,6-dien

Species	mouse
evaluation	No mutagenicity in the micronucleus test.
Remarks	negative

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

Species	mouse
evaluation	No experimental information on genotoxicity in vitro available.
Method	OECD 476
Remarks	negative

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

Species	rat (male)
evaluation	No experimental indications on genotoxicity in vivo found.
Remarks	negative

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

Species	hamster
evaluation	No experimental information on genotoxicity in vitro available.
Method	OECD 479

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

Species	Salmonella typhimurium
evaluation	No experimental information on genotoxicity in vitro available.
Method	OECD 471
Remarks	negative

citral

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

citral

Species	mouse
Remarks	negative

benzyl alcohol

evaluation	No experimental indications on genotoxicity in vivo found.

Reproduction toxicity (Components)

7-Methyl-3-methylenocta-1,6-dien

Species	rat
evaluation	Can cause malformations.

citronellol

Remarks	No data available

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

Remarks	No data available.

citral

Remarks	No data available.

benzyl alcohol

evaluation	No negative effects

Carcinogenicity (Components)

citronellol

Remarks	No data available.

7-Methyl-3-methylenocta-1,6-dien

Remarks	No data available.

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

Species	rat
Remarks	May cause cancer.

Source	RTECS

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

Species	mouse
Remarks	Based on available data, the classification criteria are not met.
Source	RTECS

citral

Remarks	No data available.

benzyl alcohol

evaluation	No negative effects

Specific Target Organ Toxicity (STOT) (Components)

citronellol

Remarks	Not applicable

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

Remarks	Not applicable

citral

Remarks	Not applicable

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.

Other information

No toxicological data are available.

SECTION 12: Ecological information ***

12.1. Toxicity

Fish toxicity (Components)

citronellol

Species	golden orfe (Leuciscus idus)			
LC50	10	to	22	mg/l
Duration of exposure	96	h		

7-Methyl-3-methylenocta-1,6-dien

Remarks	No data available.

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

Species	Fathead minnow (Pimephales promelas)		
LC50	0.72		mg/l
Duration of exposure	96	h	
Method	OECD 203		

citral

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

benzyl alcohol

Species	Fathead minnow (Pimephales promelas)		
LC50	460		mg/l
Duration of exposure	96	h	
Method	OECD 203		

benzyl alcohol

Species	Bluegill (Lepomis macrochirus)		
LC50	10		mg/l

Duration of exposure	96	h		

Daphnia toxicity (Components)

citronellol

Species	Daphnia			
EC50	17			mg/l
Duration of exposure	48	h		

7-Methyl-3-methylenocta-1,6-dien

Remarks	No data available.			

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

Species	Daphnia magna			
	0.307			mg/l
Duration of exposure	48	h		
Method	OECD 202			

alpha-Pinene, not specified

Species	Daphnia magna			
EC50	41			mg/l
Duration of exposure	48	h		

citral

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

benzyl alcohol

Species	Daphnia magna			
EC50	230			mg/l
Duration of exposure	48	h		
Method	OECD 202			

benzyl alcohol

Species	Daphnia magna			
NOEC	51			mg/l
Duration of exposure	21	d		

Algae toxicity (Components)

citronellol

EC50	2.4			mg/l
Duration of exposure	72	h		

7-Methyl-3-methylenocta-1,6-dien

Remarks	No data available.			

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

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

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

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

citral

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

benzyl alcohol

Species	Algae

IC50	770			mg/l
Duration of exposure	72	h		

benzyl alcohol

Species	Raphidocelis subcapitata			
NOEC	310			mg/l
Duration of exposure	72	h		
Method	OECD 201			

Bacteria toxicity (Components)

citronellol

Remarks No data available.

7-Methyl-3-methylenocta-1,6-dien

Remarks No data available.

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

Species	activated sludge			
EC50	3.94			mg/l
Method	OECD 209			

citral

Remarks No data available.

benzyl alcohol

EC50	390			mg/l
Duration of exposure	24	h		

benzyl alcohol

Species	activated sludge			
IC50	2100			mg/l
Duration of exposure	49	h		

12.2. Persistence and degradability

Physico-chemical eliminability (Components)

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

Remarks No data available.

citral

Remarks No data available.

Biodegradability (Components)

7-Methyl-3-methylenocta-1,6-dien

Value	76			%
Duration of test	28	d		
evaluation	Readily biodegradable			

citronellol

evaluation Readily biodegradable

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

Value	71			%
evaluation	Readily biodegradable			

alpha-Pinene, not specified

Value	62			%
Duration of test	28	d		
evaluation	Readily biodegradable			
Method	OECD 301 B			

citral

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

benzyl alcohol

Value	92	to	96	%
Duration of test	14	d		
evaluation	Readily biodegradable			
Method	OECD 301C			

benzyl alcohol

Value	95	to	97	%
Duration of test	21	d		
evaluation	Readily biodegradable			
Method	OECD 301 A			

Ready degradability (Components)

citronellol

7-Methyl-3-methylenocta-1,6-dien

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

citral

benzyl alcohol

Chemical oxygen demand (COD) (Components)

citronellol

Value	2050	mg/g

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

Remarks	No data available.

citral

Remarks	No data available.

Biochemical oxygen demand (BOD5) (Components)

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

Remarks	No data available.

citral

Remarks	No data available.

12.3. Bioaccumulative potential

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

7-Methyl-3-methylenocta-1,6-dien

log Pow	5.285	
Temperature	25	°C

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

log Pow	4.2

citral

log Pow	2.9	
Temperature	25	°C

Bioconcentration factor (BCF) (Components)

citral

Remarks	No data available

benzyl alcohol

log BCF	1.05	
Temperature	20	°C

12.4. Mobility in soil

General information

No data available

12.5. Results of PBT and vPvB assessment

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

Ecological data are not available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Disposal recommendations for the product

Recovery or recycling, if possible. Otherweise: combustion in incineration plant.
Disposal in compliance with local and national regulations.

Disposal recommendations for packaging

Dispose of as unused product.

SECTION 14: Transport information ***

	Land transport ADR/RID ***	Marine transport IMDG/GGVSee ***	Air transport ICAO/IATA ***
Tunnel restriction code	D/E		
14.1. UN number	1197	1197	1197
14.2. UN proper shipping name	EXTRACTS, FLAVOURING, LIQUID ((R)-p-mentha-1,8-diene, acetaldehyde)	EXTRACTS, FLAVOURING, LIQUID ((R)-p-mentha-1,8-diene, acetaldehyde)	EXTRACTS, FLAVOURING, LIQUID ((R)-p-mentha-1,8-diene, acetaldehyde)
14.3. Transport hazard class(es)	3	3	3
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

SECTION 16: Other information

Hazard statements listed in Chapter 3

H224	Extremely flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.

H341	Suspected of causing genetic defects.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

CLP categories listed in Chapter 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 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. 1	Flammable liquid, Category 1
Flam. Liq. 3	Flammable liquid, Category 3
Flam. Liq. 4	Flammable liquid, Category 4
Muta. 2	Germ cell mutagenicity, Category 2
Repr. 2	Reproductive toxicity, Category 2
Skin Irrit. 2	Skin irritation, Category 2
Skin Sens. 1	Skin sensitization, Category 1
Skin Sens. 1B	Skin sensitization, Category 1B
STOT SE 3	Specific target organ toxicity - single exposure, Category 3

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.