

Trade name: D-Limonen

Substance number: 013990

Version: 6 / CH

Date revised: 27.05.2020

Replaces Version: 5 / CH

Print date: 27.05.20

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

1.1. Product identifier

D-Limonen

Item No. 01399000

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 sdb@haenseler.ch

person responsible

for this SDS

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

Skin Sens. 1 H317

Asp. Tox. 1 H304

Aquatic Acute 1 H400

Aquatic Chronic 1 H410

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.

H317 May cause an allergic skin reaction.

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H304 May be fatal if swallowed and enters airways.
 H410 Very toxic to aquatic life with long lasting effects.

Precautionary statements ***

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.
 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 *** (R)-p-mentha-1,8-diene; alpha-Pinene, not specified; Geraniol; citronellol; Citral; 3,7-Dimethyl-1,6-octadien-3-ol; Farnesol; 7-Methyl-3-methylenocta-1,6-dien

SECTION 3: Composition/information on ingredients *****Molecular weight**

Value	136.2	g/mol
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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. 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

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

DSD Directive 67/548/EEC, Annex I, Note C

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

CAS No.	123-35-3		
EINECS no.	204-622-5		
Concentration	>= 1	< 10	%
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 1	H410	

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

M = 1

alpha-Pinene, not specified

CAS No.	80-56-8
EINECS no.	201-291-9

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Concentration \geq 1 < 10 %
 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

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

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

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

CAS No. 78-70-6

EINECS no. 201-134-4

Concentration < 1 %

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

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

Geraniol

CAS No. 106-24-1

EINECS no. 203-377-1

Concentration < 1 %

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

Skin Irrit. 2	H315
Skin Sens. 1	H317
Eye Dam. 1	H318

citronellol

CAS No. 106-22-9

EINECS no. 203-375-0

Concentration < 1 %

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

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

Farnesol

CAS No. 4602-84-0

EINECS no. 225-004-1

Concentration < 1 %

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

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

Citral

CAS No. 5392-40-5

EINECS no. 226-394-6

Concentration < 1 %

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

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

SECTION 4: First aid measures

4.1. Description of first aid measures

After inhalation

Ensure supply of fresh air. In the event of symptoms take medical treatment.

After skin contact

Remove contaminated, soaked clothing immediately and dispose of safely. Wash off immediately with soap and water and rinse well.

After eye contact

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. In case of irritation consult an oculist.

After ingestion

If swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting.

4.2. Most important symptoms and effects, both acute and delayed

Allergic symptoms

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media

Dry powder, Foam, Carbon dioxide

5.2. Special hazards arising from the substance or mixture

In case of combustion evolution of dangerous gases possible. Carbon monoxide (CO)

5.3. Advice for firefighters

Special protective equipment for fire-fighting

Use self-contained breathing apparatus.

Other information

Cool endangered containers with water spray jet.

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

Do not discharge into the drains/surface waters/groundwater. Do not discharge into the subsoil/soil.

6.3. Methods and material for containment and cleaning up

Ensure adequate ventilation. Take up with absorbent material (eg sand, kieselguhr, universal binder). For tall amounts: Take up mechanically and collect in suitable container for disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling

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Isolate from sources of heat, sparks and open flame. Take action to prevent static discharges. Transfer and handle only in enclosed systems.

7.2. Conditions for safe storage, including any incompatibilities

Requirements for storage rooms and vessels

Use containers with inside laquer. Use glass containers. Use aluminium containers.

Storage classes

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

Further information on storage conditions

Keep containers tightly closed in a dry, cool and well-ventilated 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/m ³	7	ppm(V)
Short term exposure limit	80	mg/m ³	14	ppm(V)
Pregnancy group: S; Status: 2017; Remarks: S SSc; LeberKT AN				

8.2. Exposure controls

Respiratory protection

Provide good ventilation of working area (local exhaust ventilation if necessary). In case of insufficient ventilation, wear suitable respiratory equipment.

Hand protection

necessary

Eye protection

Safety glasses

Body protection

necessary

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Form	liquid, clear
Colour	colourless to yellowish
Odour	fruity

Flash point

Value	51	°C
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Upper/lower flammability or explosive limits

Remarks	not determined
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Vapour pressure

Remarks	not determined
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Density

Value	0.8400	to	0.8450
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Partition coefficient: n-octanol/water

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Remarks not determined

Viscosity

Remarks not determined

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 decomposition if stored and applied as directed.

10.4. Conditions to avoid

Keep away from sources of heat and ignition.

10.5. Incompatible materials

Incompatible with: strong acids, Alkalies, Oxidising agents

10.6. Hazardous decomposition products

None known

SECTION 11: Toxicological information**11.1. Information on toxicological effects****Acute oral toxicity (Components)****Geraniol**

Species	rat		
LD50		3600	mg/kg

citronellol

Species	rat		
LD50		3450	mg/kg

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

Farnesol

Species	rat		
LD50		6000	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

Citral

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

CitralSpecies rat (female)
LOAEL 335 mg/kg**Citral**Species rat (male)
LOAEL 345 mg/kg**Acute dermal toxicity (Components)****Geraniol**Species rabbit
> 5000 mg/kg**citronellol**Species rabbit
LD50 2650 mg/kg**7-Methyl-3-methylenocta-1,6-dien**Species rabbit
LD50 > 5000 mg/kg**(R)-p-mentha-1,8-diene**Species rabbit
LD50 > 5000 mg/kg**Citral**Species Rats (male/female)
> 2000 mg/kg**Skin corrosion/irritation**

Remarks Irritating to skin.

Serious eye damage/irritation

Remarks Irritates the eyes.

Sensitization

Remarks May cause allergic skin reactions.

Sensitization (Components)**citronellol**Species mouse
evaluation sensitizing
Remarks May cause sensitization by skin contact.**7-Methyl-3-methylenocta-1,6-dien**Species mouse
evaluation non-sensitizing
Method OECD 429**(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**Mutagenicity**Method Ames test
Remarks None

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Mutagenicity (Components)**Citral**

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

Citral

Species	mouse
Remarks	negative

Reproduction toxicity (Components)**7-Methyl-3-methylenocta-1,6-dien**

Species	rat
evaluation	Can cause malformations.

Aspiration hazard

Harmful: may cause lung damage if swallowed.

SECTION 12: Ecological information**12.1. Toxicity****General information**

Very toxic to aquatic life.

Fish toxicity

Remarks No data available.

Fish toxicity (Components)**Geraniol**

LC50	Medi	3.45	mg/l
	an		
Duration of exposure	96	h	

citronellol

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

(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		

Daphnia toxicity

Remarks No data available.

Daphnia toxicity (Components)**citronellol**

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

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

Species	Daphnia magna		
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Duration of exposure	0.36		mg/l
	48	h	

Citral

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

Algae toxicity

Remarks	No data available.		
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Algae toxicity (Components)**citronellol**

EC50	2.4		mg/l
Duration of exposure	72	h	

Bacteria toxicity

Remarks	No data available.		
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Bacteria toxicity (Components)**(R)-p-mentha-1,8-diene**

Species	activated sludge		
EC50	3.94		mg/l
Method	OECD 209		

12.2. Persistence and degradability**Biodegradability**

Remarks	No data available.		
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Biodegradability (Components)**7-Methyl-3-methylenocta-1,6-dien**

Value	76		%
Duration of test	28	d	
evaluation	Readily biodegradable		

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

Value	71		%
evaluation	Readily biodegradable		

Citral

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

Chemical oxygen demand (COD) (Components)**citronellol**

Value	2050		mg/g
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12.3. Bioaccumulative potential**Partition coefficient: n-octanol/water**

Remarks	not determined		
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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		
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Citral

log Pow	2.9		
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Temperature 25 °C

12.4. Mobility in soil**General information**

not determined

12.5. Results of PBT and vPvB assessment**Evaluation of persistence and bioaccumulation potential**

The product contains no PBT or vPvB substances.







SECTION 13: Disposal considerations**13.1. Waste treatment methods****Disposal recommendations for the product**

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	2319	2319	2319
14.2. UN proper shipping name	TERPENE HYDROCARBONS, N.O.S. ((R)-p-mentha-1,8-diene)	TERPENE HYDROCARBONS, N.O.S. ((R)-p-mentha-1,8-diene)	TERPENE HYDROCARBONS, N.O.S. ((R)-p-mentha-1,8- diene)
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 ***

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

Water Hazard Class (Germany) ***

Water Hazard Class (Germany)	WGK 3
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Remarks	Derivation of WGK according to Annex 1 No. 5.2 AwSV
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SECTION 16: Other information

Hazard statements listed in Chapter 3

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.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

CLP categories listed in Chapter 3

Aquatic Acute 1	Hazardous to the aquatic environment, acute, Category 1
Aquatic Chronic 1	Hazardous to the aquatic environment, chronic, Category 1
Asp. Tox. 1	Aspiration hazard, Category 1
Eye Dam. 1	Serious eye damage, Category 1
Eye Irrit. 2	Eye irritation, Category 2
Flam. Liq. 3	Flammable liquid, Category 3
Skin Irrit. 2	Skin irritation, Category 2
Skin Sens. 1	Skin sensitization, Category 1
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.