

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**NATURAL DECANAL 50% ENRICHED ORANGE OIL FRACTION**

Revision date: 27.07.2023

Product code: 236210

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**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

NATURAL DECANAL 50% ENRICHED ORANGE OIL FRACTION

CAS No: 68606-94-0

EC No: -

**1.2. Relevant identified uses of the substance or mixture and uses advised against****1.3. Details of the supplier of the safety data sheet**

Company name:	Axxence Aromatic GmbH	
Street:	Tackenweide 28	
Place:	D-46446 Emmerich am Rhein	
Telephone:	+ 49 2822 68561 0	Telefax: + 49 2822 68561 39
e-mail:	info@axxence.com	
Contact person:	Andreas Goertz	Telephone: + 49 2822 68561 37
e-mail:	andreas.goertz@axxence.com	
Internet:	www.axxence.de	
Responsible Department:	QM - Regulatory Affairs	

**1.4. Emergency telephone number:** +49 2822 68561 99**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Regulation (EC) No 1272/2008**

Skin Irrit. 2; H315  
Eye Irrit. 2; H319  
Skin Sens. 1; H317  
Aquatic Chronic 3; H412

Full text of hazard statements: see SECTION 16.

**2.2. Label elements****Regulation (EC) No 1272/2008****Hazard components for labelling**

NATURAL LINALOOL  
NATURAL CITRAL  
NATURAL CITRONELLAL  
PERILLA ALDEHYDE  
NATURAL CITRONELLOL  
(R)-p-mentha-1,8-diene, d-limonene

**Signal word:** Warning**Pictograms:****Hazard statements**

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.

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**Precautionary statements**

P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264	Wash thoroughly after handling.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P302+P352	IF ON SKIN: Wash with plenty of water.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337+P313	If eye irritation persists: Get medical advice/attention.
P501	Dispose of contents/container to .

**2.3. Other hazards**

No information available.

**SECTION 3: Composition/information on ingredients****3.2. Mixtures**

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#### Hazardous components

CAS No	Chemical name			Quantity
	EC No	Index No	REACH No	
	Classification (Regulation (EC) No 1272/2008)			
112-31-2	NATURAL ALDEHYDE C-10 (DECANAL)			50 - 100 %
	203-957-4			
	Eye Irrit. 2; H319			
78-70-6	NATURAL LINALOOL			10 - 25 %
	201-134-4	603-235-00-2		
	Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1B; H315 H319 H317			
5392-40-5	NATURAL CITRAL			2,5 - 10 %
	226-394-6	605-019-00-3		
	Skin Irrit. 2, Skin Sens. 1; H315 H317			
98-55-5	NATURAL ALPHA-TERPINEOL			2,5 - 10 %
	202-680-6		01-2119980717-23	
	Skin Irrit. 2, Eye Irrit. 2; H315 H319			
106-23-0	NATURAL CITRONELLAL			2,5 - 10 %
	203-376-6			
	Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1; H315 H319 H317			
562-74-3	NATURAL 4-TERPINENOL			1 - 2,5 %
	209-235-5			
	Acute Tox. 4, Skin Irrit. 2, Eye Irrit. 2; H302 H315 H319			
111-87-5	NATURAL 1-OCTANOL			1 - 2,5 %
	203-917-6			
	Eye Irrit. 2, Aquatic Chronic 3; H319 H412			
2111-75-3	PERILLA ALDEHYDE			1 - 2,5 %
	218-302-8			
	Acute Tox. 4, Skin Irrit. 2, Skin Sens. 1A; H302 H315 H317			
106-22-9	NATURAL CITRONELLOL			<1 %
	203-375-0		01-2119453995-23	
	Skin Irrit. 2, Eye Irrit. 2, Skin Sens. 1; H315 H319 H317			
5989-27-5	(R)-p-mentha-1,8-diene, d-limonene			<1 %
	227-813-5	601-029-00-7		
	Flam. Liq. 3, Skin Irrit. 2, Skin Sens. 1, Asp. Tox. 1, Aquatic Acute 1, Aquatic Chronic 1; H226 H315 H317 H304 H400 H410			

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

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#### Specific Conc. Limits, M-factors and ATE

CAS No	EC No	Chemical name	Quantity
		Specific Conc. Limits, M-factors and ATE	
112-31-2	203-957-4	NATURAL ALDEHYDE C-10 (DECANAL)	50 - 100 %
		dermal: LD50 = >5000 mg/kg; oral: LD50 = >5000 mg/kg	
78-70-6	201-134-4	NATURAL LINALOOL	10 - 25 %
		dermal: LD50 = 5610 mg/kg; oral: LD50 = 2790 mg/kg	
5392-40-5	226-394-6	NATURAL CITRAL	2,5 - 10 %
		dermal: LD50 = >2000 mg/kg; oral: LD50 = 6800 mg/kg	
98-55-5	202-680-6	NATURAL ALPHA-TERPINEOL	2,5 - 10 %
		dermal: LD50 = >2000 mg/kg; oral: LD50 = 4300 mg/kg	
106-23-0	203-376-6	NATURAL CITRONELLAL	2,5 - 10 %
		dermal: LD50 = >2500 mg/kg; oral: LD50 = 2423 mg/kg	
562-74-3	209-235-5	NATURAL 4-TERPINENOL	1 - 2,5 %
		dermal: LD50 = >2500 mg/kg; oral: LD50 = 1300 mg/kg	
111-87-5	203-917-6	NATURAL 1-OCTANOL	1 - 2,5 %
		dermal: LD50 = >5000 mg/kg; oral: LD50 = >5000 mg/kg	
2111-75-3	218-302-8	PERILLA ALDEHYDE	1 - 2,5 %
		dermal: LD50 = >5000 mg/kg; oral: LD50 = 1720 mg/kg	
106-22-9	203-375-0	NATURAL CITRONELLOL	<1 %
		dermal: LD50 = 2650 mg/kg; oral: LD50 = 3450 mg/kg	
5989-27-5	227-813-5	(R)-p-mentha-1,8-diene, d-limonene	<1 %
		dermal: LD50 = >5000 mg/kg; oral: LD50 = 5300 mg/kg	

#### SECTION 4: First aid measures

##### 4.1. Description of first aid measures

###### After inhalation

Provide fresh air. When in doubt or if symptoms are observed, get medical advice.

###### After contact with skin

After contact with skin, wash immediately with plenty of water and soap. Take off immediately all contaminated clothing and wash it before reuse. Medical treatment necessary.

###### After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

###### After ingestion

Observe risk of aspiration if vomiting occurs. Rinse mouth immediately and drink 1 glass of water.

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

No information available.

##### 4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

#### SECTION 5: Firefighting measures

##### 5.1. Extinguishing media

###### Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

##### 5.2. Special hazards arising from the substance or mixture

Non-flammable. Vapours can form explosive mixtures with air.

##### 5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

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#### Additional information

Use water spray jet to protect personnel and to cool endangered containers. Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

### SECTION 6: Accidental release measures

#### 6.1. Personal precautions, protective equipment and emergency procedures

##### General advice

Provide adequate ventilation. Do not breathe gas/fumes/vapour/spray. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

#### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

#### 6.3. Methods and material for containment and cleaning up

##### For cleaning up

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

##### Other information

Absorb with liquid-binding material (sand, diatomaceous earth, acid- or universal binding agents). Treat the recovered material as prescribed in the section on waste disposal.

#### 6.4. Reference to other sections

Safe handling: see section 7

Personal protection equipment: see section 8

Disposal: see section 13

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

##### Advice on safe handling

No special measures are necessary.

##### Advice on protection against fire and explosion

No special fire protection measures are necessary.

##### Advice on general occupational hygiene

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff. Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat, drink, smoke, sniff.

#### 7.2. Conditions for safe storage, including any incompatibilities

##### Requirements for storage rooms and vessels

Keep container tightly closed.

##### Hints on joint storage

No special measures are necessary.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

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#### DNEL/DMEL values

CAS No	Name of agent		
DNEL type	Exposure route	Effect	Value
112-31-2	NATURAL ALDEHYDE C-10 (DECANAL)		
Worker DNEL, long-term	inhalation	systemic	24,86 mg/m <sup>3</sup>
Worker DNEL, acute	inhalation	systemic	49,71 mg/m <sup>3</sup>
Worker DNEL, long-term	inhalation	local	62,14 mg/m <sup>3</sup>
Worker DNEL, acute	inhalation	local	124,28 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	7,05 mg/kg bw/day
Worker DNEL, acute	dermal	systemic	14,1 mg/kg bw/day
Worker DNEL, long-term	dermal	local	17,62 mg/cm <sup>2</sup>
Worker DNEL, acute	dermal	local	35,24 mg/cm <sup>2</sup>
Consumer DNEL, long-term	inhalation	systemic	6,13 mg/m <sup>3</sup>
Consumer DNEL, acute	inhalation	systemic	12,26 mg/m <sup>3</sup>
Consumer DNEL, long-term	inhalation	local	15,32 mg/m <sup>3</sup>
Consumer DNEL, acute	inhalation	local	30,65 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic	3,52 mg/kg bw/day
Consumer DNEL, acute	dermal	systemic	7,05 mg/kg bw/day
Consumer DNEL, long-term	dermal	local	8,81 mg/cm <sup>2</sup>
Consumer DNEL, acute	dermal	local	17,62 mg/cm <sup>2</sup>
Consumer DNEL, long-term	oral	systemic	3,52 mg/kg bw/day
Consumer DNEL, acute	oral	systemic	7,05 mg/kg bw/day
78-70-6	NATURAL LINALOOL		
Worker DNEL, long-term	inhalation	systemic	24,58 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	3,5 mg/kg bw/day
Worker DNEL, acute	dermal	systemic	5 mg/kg bw/day
Worker DNEL, long-term	dermal	local	3 mg/cm <sup>2</sup>
Worker DNEL, acute	dermal	local	3 mg/cm <sup>2</sup>
Consumer DNEL, long-term	inhalation	systemic	4,33 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic	1,25 mg/kg bw/day
Consumer DNEL, long-term	dermal	local	1,5 mg/cm <sup>2</sup>
Consumer DNEL, acute	dermal	local	1,5 mg/cm <sup>2</sup>
Consumer DNEL, long-term	oral	systemic	2,49 mg/kg bw/day
5392-40-5	NATURAL CITRAL		
Worker DNEL, long-term	inhalation	systemic	9 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	1,7 mg/kg bw/day
Worker DNEL, long-term	dermal	local	0,14 mg/cm <sup>2</sup>
Consumer DNEL, long-term	inhalation	systemic	2,7 mg/m <sup>3</sup>

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Consumer DNEL, long-term	dermal	systemic	1 mg/kg bw/day
Consumer DNEL, long-term	dermal	local	0,14 mg/cm <sup>2</sup>
Consumer DNEL, long-term	oral	systemic	0,6 mg/kg bw/day
106-23-0	NATURAL CITRONELLAL		
Worker DNEL, long-term	inhalation	systemic	9 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	1,7 mg/kg bw/day
Worker DNEL, long-term	dermal	local	0,14 mg/cm <sup>2</sup>
Consumer DNEL, long-term	inhalation	systemic	2,7 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic	1 mg/kg bw/day
Consumer DNEL, long-term	dermal	local	0,14 mg/cm <sup>2</sup>
Consumer DNEL, long-term	oral	systemic	0,6 mg/kg bw/day
111-87-5	NATURAL 1-OCTANOL		
Worker DNEL, long-term	inhalation	systemic	176 mg/m <sup>3</sup>
Worker DNEL, long-term	inhalation	local	106 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	50 mg/kg bw/day
Worker DNEL, long-term	dermal	local	0,190 mg/cm <sup>2</sup>
Consumer DNEL, long-term	inhalation	systemic	43,5 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic	25 mg/kg bw/day
Consumer DNEL, long-term	dermal	local	0,067 mg/cm <sup>2</sup>
Consumer DNEL, long-term	oral	systemic	12,5 mg/kg bw/day
106-22-9	NATURAL CITRONELLOL		
Worker DNEL, long-term	inhalation	local	10 mg/m <sup>3</sup>
Worker DNEL, long-term	inhalation	systemic	161,6 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	327,4 mg/kg bw/day
Worker DNEL, acute	dermal	local	2,95 mg/cm <sup>2</sup>
Consumer DNEL, long-term	inhalation	systemic	47,8 mg/m <sup>3</sup>
Consumer DNEL, long-term	inhalation	local	10 mg/m <sup>3</sup>
Consumer DNEL, acute	inhalation	local	10 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	systemic	196,4 mg/kg bw/day
Consumer DNEL, acute	dermal	local	2,95 mg/cm <sup>2</sup>
Consumer DNEL, long-term	oral	systemic	13,8 mg/kg bw/day
5989-27-5	(R)-p-mentha-1,8-diene, d-limonene		
Worker DNEL, long-term	inhalation	systemic	66,7 mg/m <sup>3</sup>
Worker DNEL, long-term	dermal	systemic	9,5 mg/kg bw/day
Consumer DNEL, long-term	inhalation	systemic	16,6 mg/m <sup>3</sup>
Consumer DNEL, long-term	dermal	local	4,8 mg/cm <sup>2</sup>
Consumer DNEL, long-term	oral	systemic	4,8 mg/kg bw/day

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#### PNEC values

CAS No	Name of agent	
Environmental compartment		Value
112-31-2	NATURAL ALDEHYDE C-10 (DECANAL)	
Freshwater		0,00117 mg/l
Freshwater (intermittent releases)		0,0117 mg/l
Marine water		0,000117 mg/l
Freshwater sediment		0,0972 mg/kg
Marine sediment		0,00972 mg/kg
Secondary poisoning		313 mg/kg
Micro-organisms in sewage treatment plants (STP)		3,16 mg/l
Soil		0,019 mg/kg
78-70-6	NATURAL LINALOOL	
Freshwater		0,2 mg/l
Freshwater (intermittent releases)		2 mg/l
Marine water		0,02 mg/l
Freshwater sediment		2,22 mg/kg
Marine sediment		0,222 mg/kg
Secondary poisoning		7,8 mg/kg
Micro-organisms in sewage treatment plants (STP)		10 mg/l
Soil		0,327 mg/kg
5392-40-5	NATURAL CITRAL	
Freshwater		0,00678 mg/l
Freshwater (intermittent releases)		0,0678 mg/l
Marine water		0,000678 mg/l
Freshwater sediment		0,125 mg/kg
Marine sediment		0,0125 mg/kg
Micro-organisms in sewage treatment plants (STP)		1,6 mg/l
Soil		0,0209 mg/kg
98-55-5	NATURAL ALPHA-TERPINEOL	
Freshwater		0,068 mg/l
Marine water		0,0068 mg/l
Freshwater sediment		1,85 mg/kg
Marine sediment		0,185 mg/kg
Micro-organisms in sewage treatment plants (STP)		2,6 mg/l
Soil		0,329 mg/kg
106-23-0	NATURAL CITRONELLAL	
Freshwater		0,00868 mg/l
Freshwater (intermittent releases)		0,0868 mg/l
Marine water		0,000868 mg/l
Freshwater sediment		0,159 mg/kg
Marine sediment		0,0159 mg/kg
Micro-organisms in sewage treatment plants (STP)		4 mg/l



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Soil		0,0267 mg/kg
111-87-5	NATURAL 1-OCTANOL	
Freshwater		0,2 mg/l
Marine water		0,02 mg/l
Freshwater sediment		2,1 mg/kg
Marine sediment		0,21 mg/kg
Soil		0,26 mg/kg
106-22-9	NATURAL CITRONELLOL	
Freshwater		0,0024 mg/l
Freshwater (intermittent releases)		0,024 mg/l
Marine water		0,00024 mg/l
Freshwater sediment		0,0256 mg/kg
Marine sediment		0,00256 mg/kg
Micro-organisms in sewage treatment plants (STP)		580 mg/l
Soil		0,00371 mg/kg
5989-27-5	(R)-p-mentha-1,8-diene, d-limonene	
Freshwater		0,014 mg/l
Marine water		0,0014 mg/l
Freshwater sediment		3,85 mg/kg
Marine sediment		0,385 mg/kg
Secondary poisoning		133 mg/kg
Micro-organisms in sewage treatment plants (STP)		1,8 mg/l
Soil		0,763 mg/l

### 8.2. Exposure controls



#### Individual protection measures, such as personal protective equipment

##### Eye/face protection

Suitable eye protection: goggles.

##### Hand protection

Suitable gloves type: Disposable gloves + NBR (Nitrile rubber)

When handling with chemical substances, protective gloves must be worn with the CE-label including the four control digits. The quality of the protective gloves resistant to chemicals must be chosen as a function of the specific working place concentration and quantity of hazardous substances. 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.

##### Skin protection

Use of protective clothing.

##### Respiratory protection

In case of inadequate ventilation wear respiratory protection.

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#### SECTION 9: Physical and chemical properties

##### 9.1. Information on basic physical and chemical properties

Physical state:	Liquid	
Colour:	light yellow	
Melting point/freezing point:		not determined
Boiling point or initial boiling point and boiling range:		195 °C
Flammability:		not determined
Lower explosion limits:		0,9 vol. %
Upper explosion limits:		5,2 vol. %
Flash point:		85 °C
Auto-ignition temperature:		195 °C
Decomposition temperature:		not determined
pH-Value:		not determined
Water solubility:		No
Solubility in other solvents		
not determined		
Partition coefficient n-octanol/water:		not determined
Vapour pressure:		0,16 hPa
(at 20 °C)		
Vapour pressure:		2 hPa
(at 50 °C)		
Density (at 20 °C):		0,85 g/cm <sup>3</sup>
Relative vapour density:		not determined

##### 9.2. Other information

###### **Information with regard to physical hazard classes**

###### Explosive properties

The product is not: Explosive. not explosive according to EU A.14

###### Oxidizing properties

The product is not: oxidising.

###### **Other safety characteristics**

Evaporation rate:		not determined
Solvent content:		0%
Solid content:		0%

#### SECTION 10: Stability and reactivity

##### 10.1. Reactivity

No hazardous reaction when handled and stored according to provisions.

##### 10.2. Chemical stability

The product is stable under storage at normal ambient temperatures.

##### 10.3. Possibility of hazardous reactions

No known hazardous reactions.

##### 10.4. Conditions to avoid

none

##### 10.5. Incompatible materials

No information available.

##### 10.6. Hazardous decomposition products

No known hazardous decomposition products.

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**SECTION 11: Toxicological information****11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008****Acute toxicity**

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

**ATEmix calculated**

ATE (oral) 37019,9 mg/kg

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CAS No	Chemical name				
	Exposure route	Dose	Species	Source	Method
112-31-2	NATURAL ALDEHYDE C-10 (DECANAL)				
	oral	LD50 >5000 mg/kg	Rat	REACH Dossier	
	dermal	LD50 >5000 mg/kg	Rabbit	REACH Dossier	
78-70-6	NATURAL LINALOOL				
	oral	LD50 2790 mg/kg	Rat	REACH registration	OECD 401
	dermal	LD50 5610 mg/kg	Rabbit	REACH registration	OECD 402
5392-40-5	NATURAL CITRAL				
	oral	LD50 6800 mg/kg	Rat	REACH registration	
	dermal	LD50 >2000 mg/kg	Rat	REACH registration	
98-55-5	NATURAL ALPHA-TERPINEOL				
	oral	LD50 4300 mg/kg	Rat	REACH Dossier	OECD 401
	dermal	LD50 >2000 mg/kg	Rat	REACH Dossier	OECD 402
106-23-0	NATURAL CITRONELLAL				
	oral	LD50 2423 mg/kg	Rat	REACH Registration	OECD 401
	dermal	LD50 >2500 mg/kg	Rabbit	REACH Registration	
562-74-3	NATURAL 4-TERPINENOL				
	oral	LD50 1300 mg/kg	Rat	REACH registration	OECD 401
	dermal	LD50 >2500 mg/kg	Rabbit	REACH registration	OECD 402
111-87-5	NATURAL 1-OCTANOL				
	oral	LD50 >5000 mg/kg	Rat	REACH Registration	OECD 401
	dermal	LD50 >5000 mg/kg	Rat	REACH Registration	EPA OPPTS 870.1200
2111-75-3	PERILLA ALDEHYDE				
	oral	LD50 1720 mg/kg	Mouse		
	dermal	LD50 >5000 mg/kg	Pig		
106-22-9	NATURAL CITRONELLOL				
	oral	LD50 3450 mg/kg	Rat	REACH Registration	
	dermal	LD50 2650 mg/kg	Rabbit	REACH Registration	
5989-27-5	(R)-p-mentha-1,8-diene, d-limonene				
	oral	LD50 5300 mg/kg	Rat	IFA GESTIS	

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	dermal	LD50 mg/kg	>5000	Rabbit	REACH registration	OECD 402
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**Irritation and corrosivity**

Causes skin irritation.  
Causes serious eye irritation.

**Sensitising effects**

May cause an allergic skin reaction. (NATURAL LINALOOL; NATURAL CITRAL; NATURAL CITRONELLAL; PERILLA ALDEHYDE; NATURAL CITRONELLOL; (R)-p-mentha-1,8-diene, d-limonene)

**Carcinogenic/mutagenic/toxic effects for reproduction**

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

**STOT-single exposure**

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

**STOT-repeated exposure**

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

**Aspiration hazard**

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

**11.2. Information on other hazards**

**Other information**

No information available.

**Further information**

The mixture is classified as hazardous according to regulation (EC) No 1272/2008 [CLP].

### SECTION 12: Ecological information

**12.1. Toxicity**

Harmful to aquatic life with long lasting effects.

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CAS No	Chemical name					
	Aquatic toxicity	Dose	[h]   [d]	Species	Source	Method
112-31-2	NATURAL ALDEHYDE C-10 (DECANAL)					
	Acute fish toxicity	LC50 mg/l	1,45	96 h	Oncorhynchus mykiss (Rainbow trout)	REACH Dossier OECD 203
	Acute algae toxicity	ErC50	4,5 mg/l	72 h	Pseudokirchneriella subcapitata	REACH Dossier OECD 201
	Acute crustacea toxicity	EC50 mg/l	1,17	48 h	Daphnia magna (Big water flea)	REACH Dossier OECD 202
	Acute bacteria toxicity	(EC50	70 mg/l)	3 h	Activated sludge	REACH Dossier OECD 209
78-70-6	NATURAL LINALOOL					
	Acute fish toxicity	LC50 mg/l	27,8	96 h	Oncorhynchus mykiss (Rainbow trout)	REACH registration OECD 203
	Acute algae toxicity	ErC50 mg/l	88,3	96 h	Desmodesmus subspicatus	REACH registration DIN 38412 L9
	Acute crustacea toxicity	EC50	59 mg/l	48 h	Daphnia magna (Big water flea)	REACH registration OECD 202
	Acute bacteria toxicity	(EC50	>100 mg/l)	0,5 h	Activated sludge	REACH registration OECD 209
5392-40-5	NATURAL CITRAL					
	Acute fish toxicity	LC50 mg/l	6,78	96 h	Leuciscus idus (golden orfe)	REACH registration DIN 38412 L
	Acute algae toxicity	ErC50 mg/l	103,8	72 h	Desmodesmus subspicatus	REACH registration DIN 38412 L9
	Acute crustacea toxicity	EC50	6,8 mg/l	48 h	Daphnia magna (Big water flea)	REACH registration Directive 79/831 EWG, C2 annex V
	Fish toxicity	NOEC	4,6 mg/l	4 d	Leuciscus idus (golden orfe)	REACH registration DIN 38412 L
	Acute bacteria toxicity	(EC50	160 mg/l)	0,5 h	Activated sludge	REACH registration OECD 209
98-55-5	NATURAL ALPHA-TERPINEOL					
	Acute fish toxicity	LC50	70 mg/l	96 h	Danio rerio (zebrafish)	REACH Registration OECD 203
	Acute algae toxicity	ErC50	68 mg/l	72 h	Pseudokirchneriella subcapitata	REACH Registration OECD 201
	Acute crustacea toxicity	EC50	73 mg/l	48 h	Daphnia magna (Big water flea)	REACH Registration OECD 202
106-23-0	NATURAL CITRONELLAL					
	Acute fish toxicity	LC50	22 mg/l	96 h	Leuciscus idus (golden orfe)	REACH Registration OECD 203
	Acute algae toxicity	ErC50 mg/l	13,33	72 h	Desmodesmus subspicatus	REACH Registration DIN 38412, Part 9
	Acute crustacea toxicity	EC50	8,7 mg/l	48 h	Daphnia magna (Big water flea)	REACH Registration OECD 202
111-87-5	NATURAL 1-OCTANOL					
	Acute fish toxicity	LC50 mg/l	13,3	96 h	Pimephales promelas (fathead minnow)	REACH Registration OECD 203
	Acute algae toxicity	ErC50	6,5 mg/l		Desmodesmus subspicatus	REACH Registration OECD 201
	Acute crustacea toxicity	EC50	20 mg/l	48 h	Daphnia magna (Big water flea)	REACH Registration OECD 202

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	Fish toxicity	NOEC	1,5 mg/l	7 d	Pimephales promelas (fathead minnow)	REACH Registration	
	Crustacea toxicity	NOEC	1 mg/l	21 d	Daphnia magna (Big water flea)	REACH Registration	OECD 211
	Acute bacteria toxicity	(EC50 mg/l)	350	3 h	Activated sludge	REACH Registration	OECD 209
106-22-9	NATURAL CITRONELLOL						
	Acute fish toxicity	LC50 mg/l	14,66	96 h	Leuciscus idus (golden orfe)	REACH registration	DIN 38 412, part L15
	Acute algae toxicity	ErC50	2,4 mg/l	72 h	Desmodesmus subspicatus	REACH registration	
	Acute crustacea toxicity	EC50 mg/l	17,48	48 h	Daphnia magna (Big water flea)	REACH registration	EU Directive 79/831/EEC, Annex V, part C
	Fish toxicity	NOEC	4,6 mg/l	4 d	Leuciscus idus (golden orfe)	REACH registration	DIN 38 412, part L15
	Crustacea toxicity	NOEC	3,1 mg/l	2 d	Daphnia magna (Big water flea)	REACH registration	EU Directive 79/831/EEC, Annex V, part C
	Acute bacteria toxicity	(EC50 mg/l)	>10000	0,5 h	Pseudomonas putida	REACH registration	DIN 38412 Part 27
5989-27-5	(R)-p-mentha-1,8-diene, d-limonene						
	Acute fish toxicity	LC50 mg/l	0,72	96 h	Pimephales promelas (fathead minnow)	REACH registration	OECD 203
	Acute algae toxicity	ErC50 mg/l	0,32	72 h	Pseudokirchneriella subcapitata	REACH registration	OECD 201
	Acute crustacea toxicity	EC50 mg/l	0,307	48 h	Daphnia magna (Big water flea)	REACH registration	OECD 202
	Fish toxicity	NOEC mg/l	0,37	8 d	Pimephales promelas (fathead minnow)	REACH Registration	OECD 212
	Acute bacteria toxicity	(EC50 mg/l)	209	3 h	Activated sludge	REACH registration	OECD 209

#### **12.2. Persistence and degradability**

The product has not been tested.

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CAS No	Chemical name			
	Method	Value	d	Source
	Evaluation			
112-31-2	NATURAL ALDEHYDE C-10 (DECANAL)			
	OECD 301F	50%	7	REACH Registration
	Readily biodegradable (according to OECD criteria).			
	OECD 301F	76%	21	REACH Registration
	Readily biodegradable (according to OECD criteria).			
	OECD 301F	82%	28	REACH Registration
	Readily biodegradable (according to OECD criteria).			
78-70-6	NATURAL LINALOOL			
	OECD 301D	64,2%	28	REACH registration
	Readily biodegradable (according to OECD criteria).			
	OECD 301D	60,5%	15	REACH registration
	Readily biodegradable (according to OECD criteria).			
	OECD 301D	40,9%	5	REACH registration
	Readily biodegradable (according to OECD criteria).			
5392-40-5	NATURAL CITRAL			
	OECD 301C	85-95%	28	REACH registration
	Readily biodegradable (according to OECD criteria).			
98-55-5	NATURAL ALPHA-TERPINEOL			
	OECD 310	80%	28	REACH Registration
	Readily biodegradable (according to OECD criteria).			
	OECD 310	60%	12	REACH Registration
	Readily biodegradable (according to OECD criteria).			
	OECD 310	10%	5	REACH Registration
	Readily biodegradable (according to OECD criteria).			
106-23-0	NATURAL CITRONELLAL			
	OECD 301B	83%	28	REACH Registration
	Readily biodegradable (according to OECD criteria).			
	OECD 301B	63%	14	REACH Registration
	Readily biodegradable (according to OECD criteria).			
	OECD 301B	22%	5	REACH Registration
	Readily biodegradable (according to OECD criteria).			
562-74-3	NATURAL 4-TERPINENOL			
		79%	28	REACH registration
	ready biodegradability			
111-87-5	NATURAL 1-OCTANOL			
	OECD 301B	92%	28	REACH Registration
	Readily biodegradable (according to OECD criteria).			
106-22-9	NATURAL CITRONELLOL			
	OECD 301 F	90%	28	REACH Registration
	Readily biodegradable (according to OECD criteria).			
	OECD 301 F	72%	14	REACH Registration
	Readily biodegradable (according to OECD criteria).			
	OECD 301 F	37%	5	REACH Registration
	Readily biodegradable (according to OECD criteria).			
5989-27-5	(R)-p-mentha-1,8-diene, d-limonene			
	OECD 301D	80%	28	REACH Registration
	Readily biodegradable (according to OECD criteria).			



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	OECD 301D	71%	14	REACH Registration
	Readily biodegradable (according to OECD criteria).			
	OECD 301D	41%	7	REACH Registration
	Readily biodegradable (according to OECD criteria).			

#### **12.3. Bioaccumulative potential**

The product has not been tested.

#### **Partition coefficient n-octanol/water**

CAS No	Chemical name	Log Pow
112-31-2	NATURAL ALDEHYDE C-10 (DECANAL)	3,8
78-70-6	NATURAL LINALOOL	2,97
5392-40-5	NATURAL CITRAL	2,76
98-55-5	NATURAL ALPHA-TERPINEOL	2,67
106-23-0	NATURAL CITRONELLAL	3,62
562-74-3	NATURAL 4-TERPINENOL	3,26
111-87-5	NATURAL 1-OCTANOL	3,5
2111-75-3	PERILLA ALDEHYDE	3,053
106-22-9	NATURAL CITRONELLOL	3,41
5989-27-5	(R)-p-mentha-1,8-diene, d-limonene	4,5

#### **BCF**

CAS No	Chemical name	BCF	Species	Source
112-31-2	NATURAL ALDEHYDE C-10 (DECANAL)	309		
5392-40-5	NATURAL CITRAL	89,72		
98-55-5	NATURAL ALPHA-TERPINEOL	32,4		
106-23-0	NATURAL CITRONELLAL	113,6		REACH Registration
111-87-5	NATURAL 1-OCTANOL	9,1		
106-22-9	NATURAL CITRONELLOL	82,59		REACH registration
5989-27-5	(R)-p-mentha-1,8-diene, d-limonene	690,1	aquatic species	REACH registration

#### **12.4. Mobility in soil**

The product has not been tested.

#### **12.5. Results of PBT and vPvB assessment**

The substances in the mixture do not meet the PBT/vPvB criteria according to REACH, annex XIII.

The product has not been tested.

#### **12.6. Endocrine disrupting properties**

This product does not contain a substance that has endocrine disrupting properties with respect to non-target organisms as no components meets the criteria.

#### **12.7. Other adverse effects**

No information available.

#### **Further information**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil.

### **SECTION 13: Disposal considerations**

#### **13.1. Waste treatment methods**

##### **Disposal recommendations**

Do not allow to enter into surface water or drains. Do not allow to enter into soil/subsoil. Dispose of waste according to applicable legislation.

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**List of Wastes Code - residues/unused products**

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing hazardous substances; hazardous waste

**List of Wastes Code - used product**

160305 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; off-specification batches and unused products; organic wastes containing hazardous substances; hazardous waste

**List of Wastes Code - contaminated packaging**

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by hazardous substances; hazardous waste

**Contaminated packaging**

Non-contaminated packages may be recycled. Handle contaminated packages in the same way as the substance itself.

### SECTION 14: Transport information

**Land transport (ADR/RID)**

<u>14.1. UN number or ID number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.

**Inland waterways transport (ADN)**

<u>14.1. UN number or ID number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.

**Marine transport (IMDG)**

<u>14.1. UN number or ID number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.

**Air transport (ICAO-TI/IATA-DGR)**

<u>14.1. UN number or ID number:</u>	No dangerous good in sense of this transport regulation.
<u>14.2. UN proper shipping name:</u>	No dangerous good in sense of this transport regulation.
<u>14.3. Transport hazard class(es):</u>	No dangerous good in sense of this transport regulation.
<u>14.4. Packing group:</u>	No dangerous good in sense of this transport regulation.

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: No

**14.6. Special precautions for user**

No information available.

**14.7. Maritime transport in bulk according to IMO instruments**

not applicable

### SECTION 15: Regulatory information

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

**EU regulatory information**

Restrictions on use (REACH, annex XVII):

Entry 3

2010/75/EU (VOC): 20,75 % (176,375 g/l)

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2004/42/EC (VOC): 100 % (850 g/l)  
Information according to 2012/18/EU (SEVESO III): Not subject to 2012/18/EU (SEVESO III):

**National regulatory information**

Employment restrictions: Observe restrictions to employment for juveniles according to the 'juvenile work protection guideline' (94/33/EC).  
Water hazard class (D): 2 - obviously hazardous to water  
Skin resorption/Sensitization: Causes allergic hypersensitivity reactions.

**15.2. Chemical safety assessment**

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

**SECTION 16: Other information****Changes**

This data sheet contains changes from the previous version in section(s): 2,4,6,7,8,9,11,12,14,15,16.

**Abbreviations and acronyms**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)  
IMDG: International Maritime Code for Dangerous Goods  
IATA: International Air Transport Association  
GHS: Globally Harmonized System of Classification and Labelling of Chemicals  
EINECS: European Inventory of Existing Commercial Chemical Substances  
ELINCS: European List of Notified Chemical Substances  
CAS: Chemical Abstracts Service  
LC50: Lethal concentration, 50%  
LD50: Lethal dose, 50%  
CLP: Classification, labelling and Packaging  
REACH: Registration, Evaluation and Authorization of Chemicals  
GHS: Globally Harmonised System of Classification, Labelling and Packaging of Chemicals  
UN: United Nations  
DNEL: Derived No Effect Level  
DMEL: Derived Minimal Effect Level  
PNEC: Predicted No Effect Concentration  
ATE: Acute toxicity estimate  
LL50: Lethal loading, 50%  
EL50: Effect loading, 50%  
EC50: Effective Concentration 50%  
ErC50: Effective Concentration 50%, growth rate  
NOEC: No Observed Effect Concentration  
BCF: Bio-concentration factor  
PBT: persistent, bioaccumulative, toxic  
vPvB: very persistent, very bioaccumulative  
RID: Regulations concerning the international carriage of dangerous goods by rail  
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures)  
EmS: Emergency Schedules  
MFAG: Medical First Aid Guide  
ICAO: International Civil Aviation Organization  
MARPOL: International Convention for the Prevention of Marine Pollution from Ships  
IBC: Intermediate Bulk Container  
VOC: Volatile Organic Compounds  
SVHC: Substance of Very High Concern  
For abbreviations and acronyms, see table at <http://abbrev.esdscom.eu>

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For abbreviations and acronyms, see: ECHA Guidance on information requirements and chemical safety assessment, chapter R.20 (Table of terms and abbreviations).

#### Classification for mixtures and used evaluation method according to Regulation (EC) No 1272/2008 [CLP]

Classification	Classification procedure
Skin Irrit. 2; H315	Calculation method
Eye Irrit. 2; H319	Calculation method
Skin Sens. 1; H317	Calculation method
Aquatic Chronic 3; H412	Calculation method

#### Relevant H and EUH statements (number and full text)

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.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

#### Further Information

The information is based on the present level of our knowledge. It does not, however, give assurance of product properties and establishes no contract legal rights. The receiver of our product is singularly responsible for adhering to existing laws and regulations.

*(The data for the hazardous ingredients were taken respectively from the last version of the sub-contractor's safety data sheet.)*