

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Oil of thyme , nature identical

article number: **6513**
Version: **2.0 en**
Replaces version of: 2020-06-26
Version: (1)

date of compilation: 2020-06-26
Revision: 2022-04-22

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

1.1 Product identifier

Identification of the substance	Oil of thyme , nature identical
Article number	6513
Registration number (REACH)	not relevant (mixture)
Alternative name(s)	Oleum Thymi

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

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

1.3 Details of the supplier of the safety data sheet

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

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

Competent person responsible for the safety data sheet: :Department Health, Safety and Environment

e-mail (competent person): **sicherheit@carlroth.de**

1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
National Poisons Information Centre Beaumont Hospital	Beaumont Road	Dublin 9	01 809 2166	https://www.poisons.ie/

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

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Section	Hazard class	Cat-egory	Hazard class and category	Hazard statement
2.6	Flammable liquid	3	Flam. Liq. 3	H226
3.1I	Acute toxicity (inhal.)	3	Acute Tox. 3	H331
3.2	Skin corrosion/irritation	1B	Skin Corr. 1B	H314
3.3	Serious eye damage/eye irritation	1	Eye Dam. 1	H318
3.4S	Skin sensitisation	1	Skin Sens. 1	H317
3.7	Reproductive toxicity	2	Repr. 2	H361f
3.8R	Specific target organ toxicity - single exposure (respiratory tract irritation)	3	STOT SE 3	H335
3.10	Aspiration hazard	1	Asp. Tox. 1	H304
4.1C	Hazardous to the aquatic environment - chronic hazard	2	Aquatic Chronic 2	H411

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis. The product is combustible and can be ignited by potential ignition sources. Spillage and fire water can cause pollution of watercourses.

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word

Danger

Pictograms

GHS02, GHS05,
GHS06, GHS08,
GHS09



Hazard statements

H226	Flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H331	Toxic if inhaled
H335	May cause respiratory irritation
H361f	Suspected of damaging fertility (if exposed)
H411	Toxic to aquatic life with long lasting effects

Precautionary statements

Precautionary statements - prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P280	Wear protective gloves/eye protection/face protection

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Precautionary statements - response

P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting
P302+P352 IF ON SKIN: Wash with plenty of soap and water
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P310 Immediately call a POISON CENTER/doctor

For professional users only

Hazardous ingredients for labelling:

Thymol, p-Cymene, DL- α -Pinene, Linalool, Geraniol, δ -3-Carene, β -Caryophyllene, Terpinolene, L(-)-Limonene, Myrcene, Geranyl acetate, Eucalyptol, β -Pinene

Labelling of packages where the contents do not exceed 125 ml

Signal word: **Danger**

Symbol(s)



H304 May be fatal if swallowed and enters airways.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H331 Toxic if inhaled.
H361f Suspected of damaging fertility (if exposed).
P280 Wear protective gloves/eye protection/face protection.
P301+P330+P331 IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER/doctor.
contains: Thymol, p-Cymene, DL- α -Pinene, Linalool, Geraniol, δ -3-Carene, β -Caryophyllene, Terpinolene, L(-)-Limonene, Myrcene, Geranyl acetate, Eucalyptol, β -Pinene

2.3 Other hazards

Results of PBT and vPvB assessment

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

SECTION 3: Composition/information on ingredients

3.1 Substances

not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
Thymol	CAS No 89-83-8 EC No 201-944-8 Index No 604-032-00-1	25 - < 50	Acute Tox. 4 / H302 Skin Corr. 1B / H314 Eye Dam. 1 / H318 Aquatic Chronic 2 / H411		GHS-HC

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Name of sub-stance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
p-Cymene	CAS No 99-87-6 EC No 202-796-7 Index No 601-094-00-1	25 – < 50	Flam. Liq. 3 / H226 Acute Tox. 3 / H331 Repr. 2 / H361f Asp. Tox. 1 / H304 Aquatic Chronic 2 / H411		GHS-HC
Linalool	CAS No 78-70-6 EC No 201-134-4 Index No 603-235-00-2	5 – < 10	Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 Skin Sens. 1B / H317		GHS-HC
Carvacrol	CAS No 499-75-2 EC No 207-889-6	1 – < 5	Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319		
p-Cymenene	CAS No 1195-32-0 EC No 214-795-9	1 – < 5	Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 STOT SE 3 / H335		
4-Terpinenol	CAS No 562-74-3 EC No 209-235-5	1 – < 5	Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 STOT SE 3 / H335		
Camphene	CAS No 79-92-5 EC No 201-234-8	1 – < 5	Flam. Sol. 1 / H228 Eye Irrit. 2 / H319 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410		
alpha-Terpineol	CAS No 98-55-5 EC No 202-680-6	1 – < 5	Skin Irrit. 2 / H315 Eye Irrit. 2 / H319		
γ-Terpinene	CAS No 99-85-4 EC No 202-794-6	1 – < 5	Flam. Liq. 3 / H226 Repr. 2 / H361fd Aquatic Chronic 2 / H411		
Geranyl acetate	CAS No 105-87-3 EC No 203-341-5	< 1	Skin Irrit. 2 / H315 Skin Sens. 1 / H317 Aquatic Chronic 3 / H412		

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Name of sub-stance	Identifier	Wt%	Classification acc. to GHS	Pictograms	Notes
Geraniol	CAS No 106-24-1 EC No 203-377-1 Index No 603-241-00-5	< 1	Skin Irrit. 2 / H315 Eye Dam. 1 / H318 Skin Sens. 1 / H317		GHS-HC
Myrcene	CAS No 123-35-3 EC No 204-622-5	< 1	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 Skin Sens. 1 / H317 Asp. Tox. 1 / H304 Aquatic Acute 1 / H400 Aquatic Chronic 2 / H411		IARC: 2B
β-Pinene	CAS No 127-91-3 EC No 204-872-5	< 1	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Skin Sens. 1B / H317 Asp. Tox. 1 / H304 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410		
δ-3-Carene	CAS No 13466-78-9 EC No 236-719-3	< 1	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Skin Sens. 1B / H317 Asp. Tox. 1 / H304 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410		
Eucalyptol	CAS No 470-82-6 EC No 207-431-5	< 1	Flam. Liq. 3 / H226 Skin Sens. 1B / H317		
Terpinolene	CAS No 586-62-9 EC No 209-578-0	< 1	Skin Sens. 1B / H317 Asp. Tox. 1 / H304 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410		
L(-)-Limonene	CAS No 5989-54-8 EC No 227-815-6 Index No 601-029-00-7	< 1	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Skin Sens. 1 / H317 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410		C(b) GHS-HC
DL-α-Pinene	CAS No 80-56-8 EC No 201-291-9	< 1	Flam. Liq. 3 / H226 Acute Tox. 4 / H302 Skin Irrit. 2 / H315 Skin Sens. 1A / H317 Asp. Tox. 1 / H304 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410		
β-Caryophyllene	CAS No 87-44-5 EC No 201-746-1	< 1	Skin Sens. 1 / H317 Asp. Tox. 1 / H304		

Notes

C(b): The substance is a specific isomer. The mixture of isomers is mentioned in Part 3 of the Regulation (EC) No 1272/2008

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GHS-HC: Harmonised classification (the classification of the substance corresponds to the entry in the list according to 1272/2008/EC, Annex VI)

IARC: IARC group 2B: possibly carcinogenic to humans (International Agency for Research on Cancer)
2B:

Name of substance	Identifier	Specific Conc. Limits	M-Factors	ATE	Exposure route
Thymol	CAS No 89-83-8 EC No 201-944-8 Index No 604-032-00-1	-	-	980 mg/kg	oral
p-Cymene	CAS No 99-87-6 EC No 202-796-7 Index No 601-094-00-1	-	-	3 mg/l/4h	inhalation: vapour
Carvacrol	CAS No 499-75-2 EC No 207-889-6	-	-	810 mg/kg	oral
4-Terpinenol	CAS No 562-74-3 EC No 209-235-5	-	-	1.300 mg/kg	oral
Camphene	CAS No 79-92-5 EC No 201-234-8	-	M-factor (chronic) = 10.0	-	
DL- α -Pinene	CAS No 80-56-8 EC No 201-291-9	-	-	1.000 mg/kg	oral

For full text of abbreviations: see SECTION 16

SECTION 4: First aid measures

4.1 Description of first aid measures



General notes

Take off immediately all contaminated clothing. Self-protection of the first aider.

Following inhalation

Call a physician immediately. If breathing is irregular or stopped, administer artificial respiration.

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Following skin contact

After contact with skin, wash immediately with plenty of water. Immediate medical treatment required because corrosive injuries that are not treated are hard to cure. In case of skin reactions, consult a physician.

Following eye contact

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

Following ingestion

Rinse mouth immediately and drink plenty of water. Call a physician immediately. If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects). In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible). Observe aspiration hazard if vomiting occurs.

4.2 Most important symptoms and effects, both acute and delayed

Corrosion, Aspiration hazard, Vomiting, Risk of blindness, Gastric perforation, Risk of serious damage to eyes, Irritation, Allergic reactions, Cough, Dyspnoea

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media



Suitable extinguishing media

co-ordinate firefighting measures to the fire surroundings
water spray, dry extinguishing powder, BC-powder, carbon dioxide (CO₂)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

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

Hazardous combustion products

Carbon monoxide (CO), Carbon dioxide (CO₂), May produce toxic fumes of carbon monoxide if burning.

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Do not allow firefighting water to enter drains or water courses. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus. Wear full chemical protective clothing.

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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures



For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray. Avoidance of ignition sources.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it. Danger of explosion.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains.

Advice on how to clean up a spill

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

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

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

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provision of sufficient ventilation. Use extractor hood (laboratory). Handle and open container with care. Avoid exposure. Clear contaminated areas thoroughly.

Measures to prevent fire as well as aerosol and dust generation



Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge.

Measures to protect the environment

Avoid release to the environment.

Advice on general occupational hygiene

Wash hands before breaks and after work. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed.

Incompatible substances or mixtures

Observe hints for combined storage.

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Consideration of other advice:

Store locked up. Ground/bond container and receiving equipment.

Ventilation requirements

Keep any substance that emits harmful vapours or gases in a place that allows these to be permanently extracted. Use local and general ventilation.

Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

This information is not available.

Relevant DNELs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Linalool	78-70-6	DNEL	2,8 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
Linalool	78-70-6	DNEL	16,5 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
Linalool	78-70-6	DNEL	2,5 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Linalool	78-70-6	DNEL	5 mg/kg bw/day	human, dermal	worker (industry)	acute - systemic effects
γ-Terpinene	99-85-4	DNEL	2,939 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
γ-Terpinene	99-85-4	DNEL	0,833 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Camphene	79-92-5	DNEL	110,2 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
Camphene	79-92-5	DNEL	110,2 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
Camphene	79-92-5	DNEL	0,21 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Camphene	79-92-5	DNEL	1,25 mg/kg bw/day	human, dermal	worker (industry)	acute - systemic effects
DL-α-Pinene	80-56-8	DNEL	3,8 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
DL-α-Pinene	80-56-8	DNEL	0,542 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Geraniol	106-24-1	DNEL	161,6 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects

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Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Geraniol	106-24-1	DNEL	12,5 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Geraniol	106-24-1	DNEL	11.800 µg/cm ²	human, dermal	worker (industry)	chronic - local effects
L-(-)-Limonene	5989-54-8	DNEL	33,3 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
L-(-)-Limonene	5989-54-8	DNEL	222 µg/cm ²	human, dermal	worker (industry)	acute - local effects
Geranyl acetate	105-87-3	DNEL	62,59 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
Geranyl acetate	105-87-3	DNEL	35,5 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
Eucalyptol	470-82-6	DNEL	7,05 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
Eucalyptol	470-82-6	DNEL	2 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
β-Pinene	127-91-3	DNEL	5,69 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
β-Pinene	127-91-3	DNEL	0,8 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
β-Pinene	127-91-3	DNEL	54 µg/cm ²	human, dermal	worker (industry)	chronic - local effects

Relevant PNECs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
Linalool	78-70-6	PNEC	0,2 mg/l	aquatic organisms	freshwater	short-term (single instance)
Linalool	78-70-6	PNEC	0,02 mg/l	aquatic organisms	marine water	short-term (single instance)
Linalool	78-70-6	PNEC	10 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Linalool	78-70-6	PNEC	2,22 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Linalool	78-70-6	PNEC	0,222 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Linalool	78-70-6	PNEC	0,327 mg/kg	terrestrial organisms	soil	short-term (single instance)
alpha-Terpineol	98-55-5	PNEC	68 µg/l	aquatic organisms	freshwater	short-term (single instance)
alpha-Terpineol	98-55-5	PNEC	6,8 µg/l	aquatic organisms	marine water	short-term (single instance)
alpha-Terpineol	98-55-5	PNEC	2,6 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)

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Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
alpha-Terpineol	98-55-5	PNEC	1,85 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
alpha-Terpineol	98-55-5	PNEC	0,185 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
alpha-Terpineol	98-55-5	PNEC	0,329 mg/kg	terrestrial organisms	soil	short-term (single instance)
γ-Terpinene	99-85-4	PNEC	0,003 mg/l	aquatic organisms	freshwater	short-term (single instance)
γ-Terpinene	99-85-4	PNEC	0 mg/l	aquatic organisms	marine water	short-term (single instance)
γ-Terpinene	99-85-4	PNEC	10 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
γ-Terpinene	99-85-4	PNEC	0,49 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
γ-Terpinene	99-85-4	PNEC	0,049 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
γ-Terpinene	99-85-4	PNEC	0,423 mg/kg	terrestrial organisms	soil	short-term (single instance)
Camphene	79-92-5	PNEC	0,001 mg/l	aquatic organisms	freshwater	short-term (single instance)
Camphene	79-92-5	PNEC	0 mg/l	aquatic organisms	marine water	short-term (single instance)
Camphene	79-92-5	PNEC	10 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Camphene	79-92-5	PNEC	0,026 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Camphene	79-92-5	PNEC	0,003 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Camphene	79-92-5	PNEC	0,021 mg/kg	terrestrial organisms	soil	short-term (single instance)
DL-α-Pinene	80-56-8	PNEC	0,606 µg/l	aquatic organisms	freshwater	short-term (single instance)
DL-α-Pinene	80-56-8	PNEC	0,061 µg/l	aquatic organisms	marine water	short-term (single instance)
DL-α-Pinene	80-56-8	PNEC	0,2 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
DL-α-Pinene	80-56-8	PNEC	157 µg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
DL-α-Pinene	80-56-8	PNEC	15,7 µg/kg	aquatic organisms	marine sediment	short-term (single instance)
DL-α-Pinene	80-56-8	PNEC	31,7 µg/kg	terrestrial organisms	soil	short-term (single instance)
Geraniol	106-24-1	PNEC	0,011 mg/l	aquatic organisms	freshwater	short-term (single instance)

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Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
Geraniol	106-24-1	PNEC	0,001 mg/l	aquatic organisms	marine water	short-term (single instance)
Geraniol	106-24-1	PNEC	0,7 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Geraniol	106-24-1	PNEC	0,115 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Geraniol	106-24-1	PNEC	0,011 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Geraniol	106-24-1	PNEC	0,017 mg/kg	terrestrial organisms	soil	short-term (single instance)
L-(-)-Limonene	5989-54-8	PNEC	5,4 µg/l	aquatic organisms	freshwater	short-term (single instance)
L-(-)-Limonene	5989-54-8	PNEC	0,54 µg/l	aquatic organisms	marine water	short-term (single instance)
L-(-)-Limonene	5989-54-8	PNEC	0,2 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
L-(-)-Limonene	5989-54-8	PNEC	1,322 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
L-(-)-Limonene	5989-54-8	PNEC	0,132 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
L-(-)-Limonene	5989-54-8	PNEC	0,262 mg/kg	terrestrial organisms	soil	short-term (single instance)
Geranyl acetate	105-87-3	PNEC	3,72 µg/l	aquatic organisms	freshwater	short-term (single instance)
Geranyl acetate	105-87-3	PNEC	0,372 µg/l	aquatic organisms	marine water	short-term (single instance)
Geranyl acetate	105-87-3	PNEC	8 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Geranyl acetate	105-87-3	PNEC	0,442 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Geranyl acetate	105-87-3	PNEC	0,044 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Geranyl acetate	105-87-3	PNEC	0,086 mg/kg	terrestrial organisms	soil	short-term (single instance)
Eucalyptol	470-82-6	PNEC	57 µg/l	aquatic organisms	freshwater	short-term (single instance)
Eucalyptol	470-82-6	PNEC	5,7 µg/l	aquatic organisms	marine water	short-term (single instance)
Eucalyptol	470-82-6	PNEC	10 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Eucalyptol	470-82-6	PNEC	1,425 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Eucalyptol	470-82-6	PNEC	0,142 mg/kg	aquatic organisms	marine sediment	short-term (single instance)

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Relevant PNECs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
Eucalyptol	470-82-6	PNEC	0,25 mg/kg	terrestrial organisms	soil	short-term (single instance)
β -Pinene	127-91-3	PNEC	1,004 μ g/l	aquatic organisms	freshwater	short-term (single instance)
β -Pinene	127-91-3	PNEC	0,1 μ g/l	aquatic organisms	marine water	short-term (single instance)
β -Pinene	127-91-3	PNEC	3,26 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
β -Pinene	127-91-3	PNEC	0,337 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
β -Pinene	127-91-3	PNEC	0,034 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
β -Pinene	127-91-3	PNEC	0,067 mg/kg	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection



Use safety goggle with side protection. Wear face protection.

Skin protection



• hand protection

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

• type of material

NBR (Nitrile rubber)

• material thickness

>0,3 mm 0,7mm

• breakthrough times of the glove material

>480 minutes (permeation: level 6)

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• other protection measures

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

Respiratory protection



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

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	liquid
Colour	yellow - red brown
Odour	characteristic
Melting point/freezing point	not determined
Boiling point or initial boiling point and boiling range	>100 °C
Flammability	flammable liquid in accordance with GHS criteria
Lower and upper explosion limit	not determined
Flash point	57 °C
Auto-ignition temperature	not determined
Decomposition temperature	not relevant
pH (value)	not determined
Kinematic viscosity	not determined
<u>Solubility(ies)</u>	
Water solubility	(practically insoluble)
<u>Partition coefficient</u>	
Partition coefficient n-octanol/water (log value):	this information is not available
Vapour pressure	not determined
<u>Density and/or relative density</u>	
Density	0,92 g/cm ³ at 20 °C
Relative vapour density	information on this property is not available

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Particle characteristics not relevant (liquid)

Other safety parameters

Oxidising properties none

9.2 Other information

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

Other safety characteristics: There is no additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity

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

If heated

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

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

Violent reaction with: strong oxidiser

10.4 Conditions to avoid

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

10.5 Incompatible materials

There is no additional information.

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

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

Test data are not available for the complete mixture.

Classification procedure

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

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity

Toxic if inhaled.

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Acute toxicity estimate (ATE) of components of the mixture

Name of substance	CAS No	Exposure route	ATE
Thymol	89-83-8	oral	980 mg/kg
p-Cymene	99-87-6	inhalation: vapour	3 mg/l/4h
Carvacrol	499-75-2	oral	810 mg/kg
4-Terpinenol	562-74-3	oral	1.300 mg/kg
DL- α -Pinene	80-56-8	oral	1.000 mg/kg

Acute toxicity of components of the mixture

Name of substance	CAS No	Exposure route	Endpoint	Value	Species
Thymol	89-83-8	oral	LD50	980 mg/kg	rat
Thymol	89-83-8	dermal	LD50	>2.000 mg/kg	rat
p-Cymene	99-87-6	oral	LD50	4.750 mg/kg	rat
p-Cymene	99-87-6	dermal	LD50	>5.000 mg/kg	rabbit
Linalool	78-70-6	oral	LD50	2.790 mg/kg	rat
Linalool	78-70-6	dermal	LD50	5.610 mg/kg	rabbit
Carvacrol	499-75-2	oral	LD50	810 mg/kg	rat
alpha-Terpineol	98-55-5	oral	LD50	4.300 mg/kg	rat
alpha-Terpineol	98-55-5	dermal	LD50	>2.000 mg/kg	rat
γ -Terpinene	99-85-4	oral	LD50	>2.000 mg/kg	rat
γ -Terpinene	99-85-4	dermal	LD50	>2.000 mg/kg	rat
4-Terpinenol	562-74-3	oral	LD50	1.300 mg/kg	rat
4-Terpinenol	562-74-3	dermal	LD50	>2.500 – <5.000 mg/kg	rabbit
DL- α -Pinene	80-56-8	dermal	LD50	>2.000 mg/kg	rat
DL- α -Pinene	80-56-8	oral	LD50	3.700 mg/kg	rat
Geraniol	106-24-1	oral	LD50	3.600 mg/kg	rat
Geraniol	106-24-1	dermal	LD50	>5.000 mg/kg	rabbit
δ -3-Carene	13466-78-9	oral	LD50	4.800 mg/kg	rat
β -Caryophyllene	87-44-5	oral	LD50	>5.000 mg/kg	mouse
Terpinolene	586-62-9	oral	LD50	>2.000 mg/kg	rat
Terpinolene	586-62-9	dermal	LD50	>2.000 mg/kg	rat
Myrcene	123-35-3	oral	LD50	>3.380 mg/kg	mouse
Myrcene	123-35-3	dermal	LD50	>5.000 mg/kg	rabbit

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Acute toxicity of components of the mixture					
Name of substance	CAS No	Exposure route	Endpoint	Value	Species
Geranyl acetate	105-87-3	oral	LD50	6.330 mg/kg	rat
Eucalyptol	470-82-6	oral	LD50	2.480 mg/kg	rat
β-Pinene	127-91-3	oral	LD50	4.700 mg/kg	rat

Skin corrosion/irritation

Causes severe skin burns and eye damage.

Serious eye damage/eye irritation

Causes serious eye damage.

Respiratory or skin sensitisation

May cause an allergic skin reaction.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Suspected of damaging fertility (if exposed).

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

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

Aspiration hazard

May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

If swallowed danger of perforation of the esophagus and the stomach (strong corrosive effects), aspiration hazard

• If in eyes

causes burns, Causes serious eye damage, risk of blindness

• If inhaled

Irritation to respiratory tract, cough, Dyspnoea

• If on skin

causes severe burns, causes poorly healing wounds, May produce an allergic reaction, pruritis, localised redness

• Other information

none

11.2 Endocrine disrupting properties

None of the ingredients are listed.

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11.3 Information on other hazards

There is no additional information.

SECTION 12: Ecological information

12.1 Toxicity

Toxic to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Thymol	89-83-8	LC50	3,2 mg/l	fish	96 h
Thymol	89-83-8	ErC50	14 mg/l	algae	72 h
Thymol	89-83-8	EC50	7,7 mg/l	algae	72 h
p-Cymene	99-87-6	LC50	48 mg/l	fish	96 h
p-Cymene	99-87-6	EC50	3,7 mg/l	aquatic invertebrates	48 h
p-Cymene	99-87-6	ErC50	4,03 mg/l	algae	72 h
Linalool	78-70-6	LC50	27,8 mg/l	fish	96 h
Linalool	78-70-6	EC50	59 mg/l	aquatic invertebrates	48 h
Linalool	78-70-6	ErC50	156,7 mg/l	algae	96 h
Carvacrol	499-75-2	LC50	6,17 mg/l	fish	96 h
Carvacrol	499-75-2	EC50	6,06 mg/l	aquatic invertebrates	48 h
Carvacrol	499-75-2	ErC50	4,05 mg/l	algae	72 h
alpha-Terpineol	98-55-5	LC50	70 mg/l	fish	96 h
alpha-Terpineol	98-55-5	EC50	73 mg/l	aquatic invertebrates	48 h
alpha-Terpineol	98-55-5	ErC50	68 mg/l	algae	72 h
γ-Terpinene	99-85-4	EC50	2,792 mg/l	fish	96 h
Camphene	79-92-5	LC50	0,72 mg/l	fish	96 h
Camphene	79-92-5	EC50	0,72 mg/l	aquatic invertebrates	48 h
Camphene	79-92-5	ErC50	>1.000 mg/l	algae	72 h
DL-α-Pinene	80-56-8	LC50	0,303 mg/l	fish	96 h
DL-α-Pinene	80-56-8	EC50	0,475 mg/l	aquatic invertebrates	48 h
Geraniol	106-24-1	LC50	22 mg/l	fish	96 h
Geraniol	106-24-1	EC50	10,8 mg/l	aquatic invertebrates	48 h
Geraniol	106-24-1	ErC50	13,1 mg/l	algae	72 h
β-Caryophyllene	87-44-5	EC50	>0,17 mg/l	daphnia magna	48 h
β-Caryophyllene	87-44-5	ErC50	>0,033 mg/l	algae	72 h

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Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Terpinolene	586-62-9	LC50	0,805 mg/l	fish	96 h
Terpinolene	586-62-9	EC50	0,634 mg/l	aquatic invertebrates	48 h
Terpinolene	586-62-9	ErC50	0,692 mg/l	algae	72 h
Myrcene	123-35-3	EC50	1,47 mg/l	aquatic invertebrates	48 h
Myrcene	123-35-3	EC50	0,31 mg/l	algae	72 h
Myrcene	123-35-3	ErC50	0,342 mg/l	algae	72 h
Geranyl acetate	105-87-3	LC50	68,12 mg/l	fish	96 h
Geranyl acetate	105-87-3	EC50	14,1 mg/l	aquatic invertebrates	48 h
Geranyl acetate	105-87-3	ErC50	3,72 mg/l	algae	72 h
Eucalyptol	470-82-6	LC50	57 mg/l	fish	96 h
Eucalyptol	470-82-6	EC50	>100 mg/l	aquatic invertebrates	48 h
Eucalyptol	470-82-6	ErC50	>74 mg/l	algae	72 h
β -Pinene	127-91-3	LC50	0,68 mg/l	rainbow trout (<i>Oncorhynchus mykiss</i>)	96 h
β -Pinene	127-91-3	EC50	1,09 mg/l	daphnia magna	48 h
β -Pinene	127-91-3	ErC50	0,7 mg/l	<i>Pseudokirchneriella subcapitata</i>	72 h

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Thymol	89-83-8	EC50	3,5 mg/l	aquatic invertebrates	21 d
Linalool	78-70-6	EC50	>100 mg/l	microorganisms	30 min
Carvacrol	499-75-2	EC50	75,75 mg/l	microorganisms	3 h
γ -Terpinene	99-85-4	EC50	>1.000 mg/l	microorganisms	3 h
Camphene	79-92-5	EC50	>1.000 mg/l	microorganisms	3 h
Geraniol	106-24-1	EC50	70 mg/l	microorganisms	30 min
Terpinolene	586-62-9	EC50	69 mg/l	microorganisms	3 h
Eucalyptol	470-82-6	EC50	>100 mg/l	microorganisms	3 h
β -Pinene	127-91-3	EC50	326 mg/l	microorganisms	3 h

Biodegradation

Not readily biodegradable.

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12.2 Process of degradability

Degradability of components of the mixture						
Name of substance	CAS No	Process	Degradation rate	Time	Method	Source
Thymol	89-83-8	biotic/abiotic	>80 %	28 d		
Thymol	89-83-8	oxygen depletion	83 %	28 d		ECHA
p-Cymene	99-87-6	oxygen depletion	88 %	14 d		ECHA
Linalool	78-70-6	oxygen depletion	40,9 %	5 d		ECHA
Carvacrol	499-75-2	oxygen depletion	18,1 %	28 d		ECHA
alpha-Terpinol	98-55-5	carbon dioxide generation	80 %	28 d	OECD Guideline 310	
γ-Terpinene	99-85-4	oxygen depletion	27 %	28 d		ECHA
DL-α-Pinene	80-56-8	oxygen depletion	68 %	28 d		ECHA
Geraniol	106-24-1	DOC removal	90 – 100 %	3 d		ECHA
β-Caryophyllene	87-44-5	oxygen depletion	10 %	28 d		ECHA
Terpinolene	586-62-9	oxygen depletion	81 %	28 d		ECHA
L-(-)-Limonene	5989-54-8	oxygen depletion	85 %	28 d		ECHA
Myrcene	123-35-3	oxygen depletion	76 %	28 d		ECHA
Geranyl acetate	105-87-3	oxygen depletion	>70 %	28 d		ECHA
Eucalyptol	470-82-6	carbon dioxide generation	82 %	28 d		ECHA
β-Pinene	127-91-3	oxygen depletion	76 %	28 d		ECHA

12.3 Bioaccumulative potential

Data are not available.

Bioaccumulative potential of components of the mixture				
Name of substance	CAS No	BCF	Log KOW	BOD5/COD
Thymol	89-83-8	48	3,3	
p-Cymene	99-87-6		4,8 (pH value: ~7, 20 °C)	
Linalool	78-70-6		2,9 (pH value: 7, 20 °C)	
Carvacrol	499-75-2		3,33 (40 °C)	
alpha-Terpineol	98-55-5		2,6 (30 °C)	

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Bioaccumulative potential of components of the mixture				
Name of substance	CAS No	BCF	Log KOW	BOD5/COD
γ -Terpinene	99-85-4		5,4 (25 °C)	
Camphene	79-92-5		4,22 (pH value: 7,2, 37 °C)	
DL- α -Pinene	80-56-8		4,83	
Geraniol	106-24-1		2,6 (25 °C)	
δ -3-Carene	13466-78-9		4,38	
β -Caryophyllene	87-44-5		6,23 (pH value: 7, 25 °C)	
Terpinolene	586-62-9		4,47	
L-(-)-Limonene	5989-54-8	864,8	4,38 (pH value: 7,2, 37 °C)	
Myrcene	123-35-3		4,82 (pH value: ~6,5, 30 °C)	
Geranyl acetate	105-87-3		4,04	
Eucalyptol	470-82-6		3,4	

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

None of the ingredients are listed.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods



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

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process. Waste catalogue ordinance (Germany).

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national

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waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1 UN number or ID number

ADRRID	UN 1992
IMDG-Code	UN 1992
ICAO-TI	UN 1992

14.2 UN proper shipping name

ADRRID	FLAMMABLE LIQUID, TOXIC, N.O.S.
IMDG-Code	FLAMMABLE LIQUID, TOXIC, N.O.S.
ICAO-TI	Flammable liquid, toxic, n.o.s.
Technical name (hazardous ingredients)	p-Cymene, Thymol

14.3 Transport hazard class(es)

ADRRID	3 (6.1)
IMDG-Code	3 (6.1)
ICAO-TI	3 (6.1)

14.4 Packing group

ADRRID	III
IMDG-Code	III
ICAO-TI	III

14.5 Environmental hazards

	hazardous to the aquatic environment
Environmentally hazardous substance (aquatic environment):	Thymol

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Maritime transport in bulk according to IMO instruments

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN) - Additional information

Proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S.
Particulars in the transport document	UN1992, FLAMMABLE LIQUID, TOXIC, N.O.S., (contains: p-Cymene, Thymol), 3 (6.1), III, (D/E), environmentally hazardous
Classification code	FT1
Danger label(s)	3+6.1, "Fish and tree"



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Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	274, 802(ADN)
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
Transport category (TC)	3
Tunnel restriction code (TRC)	D/E
Hazard identification No	36

Regulations concerning the International Carriage of Dangerous Goods by Rail (RID) Additional information

Classification code	3
Danger label(s)	3+6.1 Fish and tree



Environmental hazards	Yes Hazardous to water
Special provisions (SP)	274, 802(ADN)
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
Transport category (TC)	3
Hazard identification No	36

International Maritime Dangerous Goods Code (IMDG) - Additional information

Proper shipping name	FLAMMABLE LIQUID, TOXIC, N.O.S.
Particulars in the shipper's declaration	UN1992, FLAMMABLE LIQUID, TOXIC, N.O.S., (contains: p-Cymene, Thymol), 3 (6.1), III, 57°C c.c., MARINE POLLUTANT

Marine pollutant	yes (hazardous to the aquatic environment), (Thymol)
Danger label(s)	3+6.1, "Fish and tree"



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

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

Proper shipping name	Flammable liquid, toxic, n.o.s.
Particulars in the shipper's declaration	UN1992, Flammable liquid, toxic, n.o.s., (contains: p-Cymene, Thymol), 3 (6.1), III
Environmental hazards	YES (hazardous to the aquatic environment)
Danger label(s)	3+6.1
 	
Special provisions (SP)	A3
Excepted quantities (EQ)	E1
Limited quantities (LQ)	2 L

SECTION 15: Regulatory information

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

Relevant provisions of the European Union (EU)

Restrictions according to REACH, Annex XVII

Dangerous substances with restrictions (REACH, Annex XVII)				
Name of substance	Name acc. to inventory	CAS No	Restriction	No
Oil of thyme	this product meets the criteria for classification in accordance with Regulation No 1272/2008/EC		R3	3
Geranyl acetate	substances in tattoo inks and permanent make-up		R75	75
Geraniol	substances in tattoo inks and permanent make-up		R75	75
Myrcene	flammable / pyrophoric		R40	40
Myrcene	substances in tattoo inks and permanent make-up		R75	75
β -Pinene	flammable / pyrophoric		R40	40
β -Pinene	substances in tattoo inks and permanent make-up		R75	75
δ -3-Carene	flammable / pyrophoric		R40	40
δ -3-Carene	substances in tattoo inks and permanent make-up		R75	75
Eucalyptol	flammable / pyrophoric		R40	40
L(-)-Limonene	flammable / pyrophoric		R40	40
L(-)-Limonene	substances in tattoo inks and permanent make-up		R75	75
Camphene	flammable / pyrophoric		R40	40
DL- α -Pinene	flammable / pyrophoric		R40	40
β -Caryophyllene	substances in tattoo inks and permanent make-up		R75	75

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Dangerous substances with restrictions (REACH, Annex XVII)				
Name of substance	Name acc. to inventory	CAS No	Restriction	No
γ-Terpinene	flammable / pyrophoric		R40	40
γ-Terpinene	substances in tattoo inks and permanent make-up		R75	75
p-Cymene	flammable / pyrophoric		R40	40
p-Cymene	substances in tattoo inks and permanent make-up		R75	75

Legend

- R3
1. Shall not be used in:
 - ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
 - tricks and jokes,
 - games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
 2. Articles not complying with paragraph 1 shall not be placed on the market.
 3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
 - can be used as fuel in decorative oil lamps for supply to the general public, and
 - present an aspiration hazard and are labelled with H304.
 4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
 5. Without prejudice to the implementation of other Union provisions relating to the classification, labelling and packaging of substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
 - (a) lamp oils, labelled with H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: "Keep lamps filled with this liquid out of the reach of children"; and, by 1 December 2010, "Just a sip of lamp oil – or even sucking the wick of lamps – may lead to life-threatening lung damage";
 - (b) grill lighter fluids, labelled with H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: "Just a sip of grill lighter fluid may lead to life threatening lung damage";
 - (c) lamps oils and grill lighters, labelled with H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.;
- R40
1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
 - metallic glitter intended mainly for decoration,
 - artificial snow and frost,
 - 'whoopee' cushions,
 - silly string aerosols,
 - imitation excrement,
 - horns for parties,
 - decorative flakes and foams,
 - artificial cobwebs,
 - stink bombs.
 2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with:
'For professional users only'.
 3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC (2).
 4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

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Legend

- R75 1. Shall not be placed on the market in mixtures for use for tattooing purposes, and mixtures containing any such substances shall not be used for tattooing purposes, after 4 January 2022 if the substance or substances in question is or are present in the following circumstances:
- (a) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as carcinogen category 1A, 1B or 2, or germ cell mutagen category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
 - (b) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as reproductive toxicant category 1A, 1B or 2, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
 - (c) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin sensitiser category 1, 1A or 1B, the substance is present in the mixture in a concentration equal to or greater than 0,001 % by weight;
 - (d) in the case of a substance classified in Part 3 of Annex VI to Regulation (EC) No 1272/2008 as skin corrosive category 1, 1A, 1B or 1C or skin irritant category 2, or as serious eye damage category 1 or eye irritant category 2, the substance is present in the mixture in a concentration equal to or greater than:
 - (i) 0,1 % by weight, if the substance is used solely as a pH regulator;
 - (ii) 0,01 % by weight, in all other cases;
 - (e) in the case of a substance listed in Annex II to Regulation (EC) No 1223/2009 (*1), the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight;
 - (f) in the case of a substance for which a condition of one or more of the following kinds is specified in column g (Product type, Body parts) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration equal to or greater than 0,00005 % by weight:
 - (i) "Rinse-off products";
 - (ii) "Not to be used in products applied on mucous membranes";
 - (iii) "Not to be used in eye products";
 - (g) in the case of a substance for which a condition is specified in column h (Maximum concentration in ready for use preparation) or column i (Other) of the table in Annex IV to Regulation (EC) No 1223/2009, the substance is present in the mixture in a concentration, or in some other way, that does not accord with the condition specified in that column;
 - (h) in the case of a substance listed in Appendix 13 to this Annex, the substance is present in the mixture in a concentration equal to or greater than the concentration limit specified for that substance in that Appendix.
2. For the purposes of this entry use of a mixture "for tattooing purposes" means injection or introduction of the mixture into a person's skin, mucous membrane or eyeball, by any process or procedure (including procedures commonly referred to as permanent make-up, cosmetic tattooing, micro-blading and micro-pigmentation), with the aim of making a mark or design on his or her body.
3. If a substance not listed in Appendix 13 falls within more than one of points (a) to (g) of paragraph 1, the strictest concentration limit laid down in the points in question shall apply to that substance. If a substance listed in Appendix 13 also falls within one or more of points (a) to (g) of paragraph 1, the concentration limit laid down in point (h) of paragraph 1 shall apply to that substance.
4. By way of derogation, paragraph 1 shall not apply to the following substances until 4 January 2023:
(a) Pigment Blue 15:3 (CI 74160, EC No 205-685-1, CAS No 147-14-8);
(b) Pigment Green 7 (CI 74260, EC No 215-524-7, CAS No 1328-53-6).
5. If Part 3 of Annex VI to Regulation (EC) No 1272/2008 is amended after 4 January 2021 to classify or re-classify a substance such that the substance then becomes caught by point (a), (b), (c) or (d) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the date of application of that new or revised classification is after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect on the date of application of that new or revised classification.
6. If Annex II or Annex IV to Regulation (EC) No 1223/2009 is amended after 4 January 2021 to list or change the listing of a substance such that the substance then becomes caught by point (e), (f) or (g) of paragraph 1 of this entry, or such that it then falls within a different one of those points from the one within which it fell previously, and the amendment takes effect after the date referred to in paragraph 1 or, as the case may be, paragraph 4 of this entry, that amendment shall, for the purposes of applying this entry to that substance, be treated as taking effect from the date falling 18 months after entry into force of the act by which that amendment was made.
7. Suppliers placing a mixture on the market for use for tattooing purposes shall ensure that, after 4 January 2022, the mixture is marked with the following information:
(a) the statement "Mixture for use in tattoos or permanent make-up";
(b) a reference number to uniquely identify the batch;
(c) the list of ingredients in accordance with the nomenclature established in the glossary of common ingredient names pursuant to Article 33 of Regulation (EC) No 1223/2009, or in the absence of a common ingredient name, the IUPAC name. In the absence of a common ingredient name or IUPAC name, the CAS and EC number. Ingredients shall be listed in descending order by weight or volume of the ingredients at the time of formulation. "Ingredient" means any substance added during the process of formulation and present in the mixture for use for tattooing purposes. Impurities shall not be regarded as ingredients. If the name of a substance, used as ingredient within the meaning of this entry, is already required to be stated on the label in accordance with Regulation (EC) No 1272/2008, that ingredient does not need to be marked in accordance with this Regulation;
(d) the additional statement "pH regulator" for substances falling under point (d)(i) of paragraph 1;
(e) the statement "Contains nickel. Can cause allergic reactions." if the mixture contains nickel below the concentration limit specified in Appendix 13;
(f) the statement "Contains chromium (VI). Can cause allergic reactions." if the mixture contains chromium (VI) below the concentration limit specified in Appendix 13;
(g) safety instructions for use insofar as they are not already required to be stated on the label by Regulation (EC) No 1272/2008.
- The information shall be clearly visible, easily legible and marked in a way that is indelible.
The information shall be written in the official language(s) of the Member State(s) where the mixture is placed on the market, unless the Member State(s) concerned provide(s) otherwise.
Where necessary because of the size of the package, the information listed in the first subparagraph, except for point (a), shall be included instead in the instructions for use.
Before using a mixture for tattooing purposes, the person using the mixture shall provide the person undergoing the procedure with the information marked on the package or included in the instructions for use pursuant to this paragraph.
8. Mixtures that do not contain the statement "Mixture for use in tattoos or permanent make-up" shall not be used for tattooing purposes.

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Legend

9. This entry does not apply to substances that are gases at temperature of 20 °C and pressure of 101,3 kPa, or generate a vapour pressure of more than 300 kPa at temperature of 50 °C, with the exception of formaldehyde (CAS No 50-00-0, EC No 200-001-8).

10. This entry does not apply to the placing on the market of a mixture for use for tattooing purposes, or to the use of a mixture for tattooing purposes, when placed on the market exclusively as a medical device or an accessory to a medical device, within the meaning of Regulation (EU) 2017/745, or when used exclusively as a medical device or an accessory to a medical device, within the same meaning. Where the placing on the market or use may not be exclusively as a medical device or an accessory to a medical device, the requirements of Regulation (EU) 2017/745 and of this Regulation shall apply cumulatively.

List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list

None of the ingredients are listed.

Seveso Directive

2012/18/EU (Seveso III)			
No	Dangerous substance/hazard categories	Qualifying quantity (tonnes) for the application of lower and upper-tier requirements	Notes
H2	acute toxic (cat. 2 + cat. 3, inhal.)	50 200	41)

Notation

- 41) - Category 2, all exposure routes
- category 3, inhalation exposure route

Deco-Paint Directive

VOC content	99,1 % 911,7 g/l
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Industrial Emissions Directive (IED)

VOC content	57,8 %
VOC content	531,8 g/l

Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)

none of the ingredients are listed

Regulation concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

none of the ingredients are listed

Water Framework Directive (WFD)

List of pollutants (WFD)				
Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
Myrcene	Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment		a)	

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List of pollutants (WFD)				
Name of substance	Name acc. to inventory	CAS No	Listed in	Remarks
Linalool	Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment		a)	
γ-Terpinene	Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment		a)	
p-Cymene	Substances and preparations, or the breakdown products of such, which have been proved to possess carcinogenic or mutagenic properties or properties which may affect steroidogenic, thyroid, reproduction or other endocrine-related functions in or via the aquatic environment		a)	

Legend

A) Indicative list of the main pollutants

Regulation on the marketing and use of explosives precursors

none of the ingredients are listed

Regulation on drug precursors

none of the ingredients are listed

Regulation on substances that deplete the ozone layer (ODS)

none of the ingredients are listed

Regulation concerning the export and import of hazardous chemicals (PIC)

none of the ingredients are listed

Regulation on persistent organic pollutants (POP)

none of the ingredients are listed

Other information

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

National inventories

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

Legend

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

15.2 Chemical Safety Assessment

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

SECTION 16: Other information

Indication of changes (revised safety data sheet)

Alignment to regulation: Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU

Restructuring: section 9, section 14

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.1		Classification according to Regulation (EC) No 1272/2008 (CLP): change in the listing (table)	yes

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Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
2.1		The most important adverse physicochemical, human health and environmental effects: Skin corrosion produces an irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis. The product is combustible and can be ignited by potential ignition sources. Spillage and fire water can cause pollution of watercourses.	yes
2.2		Pictograms: change in the listing (table)	yes
2.2		Hazard statements: change in the listing (table)	yes
2.2		Precautionary statements - prevention: change in the listing (table)	yes
2.2		Precautionary statements - response: change in the listing (table)	yes
2.2	Hazardous ingredients for labelling: Thymol, DL- α -Pinene, p-Cymene, Linalool	Hazardous ingredients for labelling: Thymol, p-Cymene, DL- α -Pinene, Linalool, Geraniol, δ -3-Carene, β -Caryophyllene, Terpinolene, L-(-)-Limonene, Myrcene, Geranyl acetate, Eucalyptol, β -Pinene	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2		Labelling of packages where the contents do not exceed 125 ml: change in the listing (table)	yes
2.2	contains: Thymol, DL- α -Pinene, p-Cymene, Linalool	contains: Thymol, p-Cymene, DL- α -Pinene, Linalool, Geraniol, δ -3-Carene, β -Caryophyllene, Terpinolene, L-(-)-Limonene, Myrcene, Geranyl acetate, Eucalyptol, β -Pinene	yes
2.3	Other hazards: There is no additional information.	Other hazards	yes
2.3		Results of PBT and vPvB assessment: This mixture does not contain any substances that are assessed to be a PBT or a vPvB.	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
Acute Tox.	Acute toxicity
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord relatif au transport international des marchandises dangereuses par route (Agreement concerning the International Carriage of Dangerous Goods by Road)
Aquatic Acute	Hazardous to the aquatic environment - acute hazard
Aquatic Chronic	Hazardous to the aquatic environment - chronic hazard

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Abbr.	Descriptions of used abbreviations
Asp. Tox.	Aspiration hazard
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
BOD	Biochemical Oxygen Demand
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
COD	Chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Liq.	Flammable liquid
Flam. Sol.	Flammable solid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LD50	Lethal Dose 50 %: the LD50 corresponds to the dose of a tested substance causing 50 % lethality during a specified time interval
log KOW	n-Octanol/water

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Abbr.	Descriptions of used abbreviations
M-factor	Means a multiplying factor. It is applied to the concentration of a substance classified as hazardous to the aquatic environment acute category 1 or chronic category 1, and is used to derive by the summation method the classification of a mixture in which the substance is present
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
Repr.	Reproductive toxicity
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
Skin Sens.	Skin sensitisation
STOT SE	Specific target organ toxicity - single exposure
SVHC	Substance of Very High Concern
VOC	Volatile Organic Compounds
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures. Regulation (EC) No. 1907/2006 (REACH), amended by 2020/878/EU.

Agreement concerning the International Carriage of Dangerous Goods by Road (ADR). Regulations concerning the International Carriage of Dangerous Goods by Rail (RID). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

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

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

Code	Text
H226	Flammable liquid and vapour.
H228	Flammable solid.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.

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Code	Text
H335	May cause respiratory irritation.
H361f	Suspected of damaging fertility (if exposed).
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child (if exposed).
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.

Disclaimer

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