

# Safety data sheet

Safe Work Australia - Code of Practice



## Oil of Scotch pine needles, artificial

article number: **3306**  
Version: **GHS 1.0 en**

date of compilation: 2020-09-16

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

#### 1.1 Product identifier

Identification of the substance **Oil of Scotch pine needles, artificial**  
Article number **3306**  
Registration number (REACH) **not relevant (mixture)**

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

**Identified uses:** **laboratory chemical**  
**laboratory and analytical use**

#### 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](mailto:sicherheit@carlroth.de)

**Website:** [www.carlroth.de](http://www.carlroth.de)

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

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

#### 1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
NSW Poisons Information Centre Childrens Hospital	Hawkesbury Road	2145 Westmead, NSW	131126	

Emergency information service

**Poison Centre Munich: +49/(0)89 19240**

### SECTION 2: Hazards identification

#### 2.1 Classification of the substance or mixture

**Classification acc. to GHS**

Classification acc. to GHS			
Section	Hazard class	Hazard class and category	Hazard statement
2.6	flammable liquid	(Flam. Liq. 3)	H226
3.10	acute toxicity (oral)	(Acute Tox. 4)	H302
3.2	skin corrosion/irritation	(Skin Irrit. 2)	H315
3.4S	skin sensitisation	(Skin Sens. 1)	H317
3.10	aspiration hazard	(Asp. Tox. 1)	H304

# Safety data sheet

Safe Work Australia - Code of Practice



## Oil of Scotch pine needles, artificial

article number: 3306

### 2.2 Label elements

#### Labelling GHS

##### Signal word

**Danger**

##### Pictograms

GHS02, GHS07,  
GHS08



##### Hazard statements

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

##### Precautionary statements

###### **Precautionary statements - prevention**

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P280	Wear protective gloves.

###### **Precautionary statements - response**

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use sand, carbon dioxide or powder extinguisher for extinction.

###### **Precautionary statements - storage**

P403+P235	Store in a well-ventilated place. Keep cool.
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###### **Hazardous ingredients for labelling:**

DL- $\alpha$ -Pinene,  $\beta$ -Pinene, D-(+)-Limonene, DL-Limonene

###### **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.
H317	May cause an allergic skin reaction.
P280	Wear protective gloves.
P301+P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P331	Do NOT induce vomiting.
contains:	DL- $\alpha$ -Pinene, $\beta$ -Pinene, D-(+)-Limonene, DL-Limonene

### 2.3 Other hazards

There is no additional information.

# Safety data sheet

Safe Work Australia - Code of Practice



## Oil of Scotch pine needles, artificial

article number: 3306

### SECTION 3: Composition/information on ingredients

#### 3.2 Mixtures




##### Description of the mixture

Composition/information on ingredients.

Name of substance	Identifier	wt %	Classification acc. to 1272/2008/EC	Pictograms	Notes	M-Factors
DL- $\alpha$ -Pinene	CAS No 80-56-8  EC No 201-291-9  REACH Reg. No 01-2119519223-49-xxxx	55 – < 85	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			
$\beta$ -Pinene	CAS No 18172-67-3  EC No 204-872-5  REACH Reg. No 01-2119519230-54-xxxx	10 – < 20	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Skin Sens. 1B / H317 Asp. Tox. 1 / H304 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410			
$\delta$ -3-Carene	CAS No 13466-78-9  EC No 236-719-3  REACH Reg. No 01-2119520252-55-xxxx	1 – < 5	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Skin Sens. 1B / H317 Asp. Tox. 1 / H304 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410			
Myrcene	CAS No 123-35-3  EC No 204-622-5  REACH Reg. No 01-2119514321-56-xxxx	1 – < 5	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Eye Irrit. 2 / H319 Asp. Tox. 1 / H304 Aquatic Acute 1 / H400 Aquatic Chronic 2 / H411		IARC: 2B	
Camphene	CAS No 79-92-5  EC No 201-234-8  REACH Reg. No 01-2119446293-40-xxxx	1 – < 5	Flam. Sol. 1 / H228 Eye Irrit. 2 / H319 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410			M-factor (chronic) = 10.0
D-(+)-Limonene	CAS No 5989-27-5  EC No 227-813-5  Index No 601-029-00-7  REACH Reg. No 01-2119529223-47-xxxx	1 – < 5	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Skin Sens. 1 / H317 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410		C(b) GHS- HC	

## Oil of Scotch pine needles, artificial

article number: **3306**

Name of substance	Identifier	wt %	Classification acc. to 1272/2008/EC	Pictograms	Notes	M-Factors
DL-Limonene	CAS No 138-86-3  EC No 205-341-0  Index No 601-029-00-7	1 – < 5	Flam. Liq. 3 / H226 Skin Irrit. 2 / H315 Skin Sens. 1 / H317 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410		C(a) GHS- HC	
β-Caryophyllene	CAS No 87-44-5  EC No 201-746-1	< 1	Skin Sens. 1 / H317 Asp. Tox. 1 / H304			
Terpinolene	CAS No 586-62-9  EC No 209-578-0  REACH Reg. No 01-2119982325- 32-xxxx	< 1	Skin Sens. 1B / H317 Asp. Tox. 1 / H304 Aquatic Acute 1 / H400 Aquatic Chronic 1 / H410			

### Notes

C(a): Mixture of isomers

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

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

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

### Remarks

For full text of Hazard- and EU Hazard-statements: see SECTION 16.

## SECTION 4: First aid measures

### 4.1 Description of first aid measures



#### General notes

Take off contaminated clothing.

#### Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following skin contact

Rinse skin with water/shower. In case of skin reactions, consult a physician. In case of skin irritation, consult a physician.

#### Following eye contact

Rinse cautiously with water for several minutes. In all cases of doubt, or when symptoms persist, seek medical advice.

#### Following ingestion

Do NOT induce vomiting. Call a physician immediately. Observe aspiration hazard if vomiting occurs.

## Oil of Scotch pine needles, artificial

article number: 3306

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

Aspiration hazard, Vomiting, Irritation, Allergic reactions

### 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 fire-fighting measures to the fire surroundings  
foam, dry extinguishing powder, carbon dioxide (CO<sub>2</sub>), dry sand

#### Unsuitable extinguishing media

water jet

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

Combustible. Vapours can form explosive mixtures with air.

#### Hazardous combustion products

May produce toxic fumes of carbon monoxide if burning.

### 5.3 Advice for firefighters

Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

## SECTION 6: Accidental release measures

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



#### For non-emergency personnel

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. Explosive properties.

### 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.

## Oil of Scotch pine needles, artificial

article number: 3306

### 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.

- **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. Keep away from food, drink and animal feedingstuffs. 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.

#### **Consideration of other advice**

Ground/bond container and receiving equipment.

- **Ventilation requirements**

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)**

Data are not available.

#### **Relevant DNELs/DMELs/PNECs and other threshold levels**

## Oil of Scotch pine needles, artificial

article number: 3306

### • relevant DNELs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DL- $\alpha$ -Pinene	80-56-8	DNEL	3.8 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
DL- $\alpha$ -Pinene	80-56-8	DNEL	0.542 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
$\beta$ -Pinene	18172-67-3	DNEL	5.69 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
$\beta$ -Pinene	18172-67-3	DNEL	0.8 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
$\beta$ -Pinene	18172-67-3	DNEL	54 $\mu$ g/cm <sup>2</sup>	human, dermal	worker (industry)	chronic - local effects
Camphene	79-92-5	DNEL	110.2 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
Camphene	79-92-5	DNEL	110.2 mg/m <sup>3</sup>	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
D-(+)-Limonene	5989-27-5	DNEL	66.7 mg/m <sup>3</sup>	human, inhalatory	worker (industry)	chronic - systemic effects
D-(+)-Limonene	5989-27-5	DNEL	9.5 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

### • relevant PNECs of components of the mixture

Name of substance	CAS No	Endpoint	Threshold level	Environmental compartment	Exposure time
DL- $\alpha$ -Pinene	80-56-8	PNEC	0.606 $\mu$ g/l	freshwater	short-term (single instance)
DL- $\alpha$ -Pinene	80-56-8	PNEC	0.061 $\mu$ g/l	marine water	short-term (single instance)
DL- $\alpha$ -Pinene	80-56-8	PNEC	0.2 mg/l	sewage treatment plant (STP)	short-term (single instance)
DL- $\alpha$ -Pinene	80-56-8	PNEC	157 $\mu$ g/kg	freshwater sediment	short-term (single instance)
DL- $\alpha$ -Pinene	80-56-8	PNEC	15.7 $\mu$ g/kg	marine sediment	short-term (single instance)
DL- $\alpha$ -Pinene	80-56-8	PNEC	31.7 $\mu$ g/kg	soil	short-term (single instance)
$\beta$ -Pinene	18172-67-3	PNEC	1.004 $\mu$ g/l	freshwater	short-term (single instance)
$\beta$ -Pinene	18172-67-3	PNEC	0.1 $\mu$ g/l	marine water	short-term (single instance)
$\beta$ -Pinene	18172-67-3	PNEC	3.26 mg/l	sewage treatment plant (STP)	short-term (single instance)

## Oil of Scotch pine needles, artificial

article number: **3306**

Name of substance	CAS No	Endpoint	Threshold level	Environmental compartment	Exposure time
β-Pinene	18172-67-3	PNEC	0.337 mg/kg	freshwater sediment	short-term (single instance)
β-Pinene	18172-67-3	PNEC	0.034 mg/kg	marine sediment	short-term (single instance)
β-Pinene	18172-67-3	PNEC	0.067 mg/kg	soil	short-term (single instance)
Camphene	79-92-5	PNEC	0.001 mg/l	freshwater	short-term (single instance)
Camphene	79-92-5	PNEC	0 mg/l	marine water	short-term (single instance)
Camphene	79-92-5	PNEC	10 mg/l	sewage treatment plant (STP)	short-term (single instance)
Camphene	79-92-5	PNEC	0.026 mg/kg	freshwater sediment	short-term (single instance)
Camphene	79-92-5	PNEC	0.003 mg/kg	marine sediment	short-term (single instance)
Camphene	79-92-5	PNEC	0.021 mg/kg	soil	short-term (single instance)
D-(+)-Limonene	5989-27-5	PNEC	14 µg/l	freshwater	short-term (single instance)
D-(+)-Limonene	5989-27-5	PNEC	1.4 µg/l	marine water	short-term (single instance)
D-(+)-Limonene	5989-27-5	PNEC	1.8 mg/l	sewage treatment plant (STP)	short-term (single instance)
D-(+)-Limonene	5989-27-5	PNEC	3.85 mg/kg	freshwater sediment	short-term (single instance)
D-(+)-Limonene	5989-27-5	PNEC	0.385 mg/kg	marine sediment	short-term (single instance)
D-(+)-Limonene	5989-27-5	PNEC	0.763 mg/kg	soil	short-term (single instance)

## 8.2 Exposure controls

### Individual protection measures (personal protective equipment)

#### Eye/face protection



Use safety goggle with side protection.

#### Skin protection





## Oil of Scotch pine needles, artificial

article number: 3306

### • hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. 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

0,4 mm

### • breakthrough times of the glove material

>480 minutes (permeation: level 6)

### • 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

#### Appearance

Physical state	liquid (fluid)
Colour	clear - colourless - light yellow
Odour	characteristic
Odour threshold	No data available

#### Other physical and chemical parameters

pH (value)	This information is not available.
Melting point/freezing point	not determined
Initial boiling point and boiling range	154 °C
Flash point	45 °C
Evaporation rate	no data available
Flammability (solid, gas)	not relevant (fluid)

## Oil of Scotch pine needles, artificial

article number: **3306**

### Explosive limits

- lower explosion limit (LEL) 0.7 vol% (39 g/m<sup>3</sup>)  
(data apply to the main component)
- upper explosion limit (UEL) 6.1 vol% (345 g/m<sup>3</sup>)  
(data apply to the main component)

Explosion limits of dust clouds not relevant

Vapour pressure This information is not available.

Density 0.87 g/cm<sup>3</sup> at 20 °C

Vapour density This information is not available.

Bulk density Not applicable

Relative density Information on this property is not available.

### Solubility(ies)

Water solubility no data available

### Partition coefficient

n-octanol/water (log KOW) This information is not available.

Auto-ignition temperature 255 °C

Decomposition temperature no data available

Viscosity not determined

Explosive properties Shall not be classified as explosive

Oxidising properties none

## 9.2 Other information

Refractive index 1.47 – 1.485 (20 °C)

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Risk of ignition. In case of warming: Vapours can 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.

## Oil of Scotch pine needles, artificial

article number: 3306

### SECTION 11: Toxicological information

#### 11.1 Information on toxicological effects

##### Acute toxicity

##### • Acute toxicity of components of the mixture

Name of substance	CAS No	Exposure route	ATE
DL- $\alpha$ -Pinene	80-56-8	oral	1,000 mg/kg

##### Skin corrosion/irritation

Causes skin irritation.

##### Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

##### Respiratory or skin sensitisation

May cause an allergic skin reaction. May cause sensitization by skin contact.

##### Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

##### • Specific target organ toxicity - single exposure

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

##### • 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

presenting an aspiration hazard

##### • If in eyes

slightly irritant but not relevant for classification

##### • If inhaled

data are not available

##### • If on skin

causes skin irritation, may cause an allergic skin reaction

##### Other information

None

## Oil of Scotch pine needles, artificial

article number: 3306

### SECTION 12: Ecological information

#### 12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

#### Aquatic toxicity (acute)

#### Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
DL- $\alpha$ -Pinene	80-56-8	LC50	0.303 mg/l	fish	96 h
DL- $\alpha$ -Pinene	80-56-8	EC50	0.475 mg/l	aquatic invertebrates	48 h
$\beta$ -Pinene	18172-67-3	LC50	0.68 mg/l	rainbow trout (Oncorhynchus mykiss)	96 h
$\beta$ -Pinene	18172-67-3	EC50	1.09 mg/l	daphnia magna	48 h
$\beta$ -Pinene	18172-67-3	ErC50	0.7 mg/l	Pseudokirchneriella subcapitata	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
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
D-(+)-Limonene	5989-27-5	LC50	0.46 mg/l	fish	96 h
D-(+)-Limonene	5989-27-5	EC50	0.307 mg/l	aquatic invertebrates	48 h
D-(+)-Limonene	5989-27-5	ErC50	0.32 mg/l	algae	72 h
DL-Limonene	138-86-3	EC50	17 mg/l	daphnia magna	48 h
DL-Limonene	138-86-3	LC50	80 mg/l	rainbow trout (Oncorhynchus mykiss)	96 h
$\beta$ -Caryophyllene	87-44-5	EC50	>0.17 mg/l	daphnia magna	48 h
$\beta$ -Caryophyllene	87-44-5	ErC50	>0.033 mg/l	algae	72 h
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

## Oil of Scotch pine needles, artificial

article number: 3306

### Aquatic toxicity (chronic)

#### Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
$\beta$ -Pinene	18172-67-3	EC50	326 mg/l	microorganisms	3 h
Camphene	79-92-5	EC50	>1,000 mg/l	microorganisms	3 h
D-(+)-Limonene	5989-27-5	EC50	<0.67 mg/l	fish	8 d
D-(+)-Limonene	5989-27-5	EC50	188 $\mu$ g/l	aquatic invertebrates	21 d
Terpinolene	586-62-9	EC50	69 mg/l	microorganisms	3 h

### 12.2 Process of degradability

Data are not available.

#### Degradability of components of the mixture

Name of substance	CAS No	Process	Degradation rate	Time
DL- $\alpha$ -Pinene	80-56-8	oxygen depletion	68 %	28 d
$\beta$ -Pinene	18172-67-3	oxygen depletion	76 %	28 d
Myrcene	123-35-3	oxygen depletion	76 %	28 d
D-(+)-Limonene	5989-27-5	carbon dioxide generation	58.8 %	14 d
D-(+)-Limonene	5989-27-5	oxygen depletion	80 %	28 d
$\beta$ -Caryophyllene	87-44-5	oxygen depletion	10 %	28 d
Terpinolene	586-62-9	oxygen depletion	81 %	28 d

### 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
DL- $\alpha$ -Pinene	80-56-8		4.83	
$\beta$ -Pinene	18172-67-3		4.425 (25 °C)	
$\delta$ -3-Carene	13466-78-9		4.38	
Myrcene	123-35-3		4.82 (pH value: ~6.5, 30 °C)	
Camphene	79-92-5		4.22 (pH value: 7.2, 37 °C)	
D-(+)-Limonene	5989-27-5		4.38 (pH value: 7.2, 37 °C)	
DL-Limonene	138-86-3		4.57	
$\beta$ -Caryophyllene	87-44-5		6.23 (pH value: 7, 25 °C)	

# Safety data sheet

Safe Work Australia - Code of Practice



## Oil of Scotch pine needles, artificial

article number: 3306

Name of substance	CAS No	BCF	Log KOW	BOD5/COD
Terpinolene	586-62-9		4.47	

### 12.4 Mobility in soil

Data are not available.

### 12.5 Results of PBT and vPvB assessment

Data are not available.

### 12.6 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.

#### 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.

### 13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

## SECTION 14: Transport information

14.1 UN number	1993
14.2 UN proper shipping name	FLAMMABLE LIQUID, N.O.S.
Hazardous ingredients	DL- $\alpha$ -Pinene, Camphene
14.3 Transport hazard class(es)	
Class	3 (flammable liquids)
14.4 Packing group	III (substance presenting low danger)
14.5 Environmental hazards	hazardous to the aquatic environment (DL- $\alpha$ -Pinene)
14.6 Special precautions for user	Provisions for dangerous goods (ADR) should be complied within the premises.

## Oil of Scotch pine needles, artificial



article number: **3306**

### 14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code



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)

UN number	1993
Proper shipping name	FLAMMABLE LIQUID, N.O.S.
Particulars in the transport document	UN1993, FLAMMABLE LIQUID, N.O.S., (contains: DL- $\alpha$ -Pinene, Camphene), 3, III, (D/E), environmentally hazardous
Class	3
Classification code	F1
Packing group	III
Danger label(s)	3 + "fish and tree"
	
Environmental hazards	yes (hazardous to the aquatic environment)
Special provisions (SP)	274, 601
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
Transport category (TC)	3
Tunnel restriction code (TRC)	D/E
Hazard identification No	30
<b>Emergency Action Code</b>	<b>3Y</b>

#### • International Maritime Dangerous Goods Code (IMDG)

UN number	1993
Proper shipping name	FLAMMABLE LIQUID, N.O.S.
Particulars in the shipper's declaration	UN1993, FLAMMABLE LIQUID, N.O.S., (contains: DL- $\alpha$ -Pinene, Camphene), 3, III, 45°C c.c., MARINE POLLUTANT
Class	3
Marine pollutant	yes (P) (hazardous to the aquatic environment)
Packing group	III
Danger label(s)	3 + "fish and tree"
	
Special provisions (SP)	223, 274, 955
Excepted quantities (EQ)	E1


# Safety data sheet

Safe Work Australia - Code of Practice



## Oil of Scotch pine needles, artificial

article number: **3306**

Limited quantities (LQ)	5 L
EmS	F-E, <u>S-E</u>
Stowage category	A
<b>• International Civil Aviation Organization (ICAO-IATA/DGR)</b>	
UN number	1993
Proper shipping name	Flammable liquid, n.o.s.
Particulars in the shipper's declaration	UN1993, Flammable liquid, n.o.s., (contains: DL- $\alpha$ -Pinene, Camphene), 3, III
Class	3
Environmental hazards	yes (hazardous to the aquatic environment)
Packing group	III
Danger label(s)	3
	
Special provisions (SP)	A3
Excepted quantities (EQ)	E1
Limited quantities (LQ)	10 L

## SECTION 15: Regulatory information

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

#### National inventories

Country	National inventories	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.	all ingredients are listed
JP	CSCL-ENCS	all ingredients are listed
JP	ISHA-ENCS	not all ingredients are listed
KR	KECI	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



## Oil of Scotch pine needles, artificial

article number: **3306**

### 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

### 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 européen relatif au transport international des marchandises dangereuses par route (European 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
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)
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
COD	chemical oxygen demand
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
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

## Oil of Scotch pine needles, artificial

article number: **3306**

Abbr.	Descriptions of used abbreviations
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
IMDG	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
log KOW	n-octanol/water
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
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
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
vPvB	very Persistent and very Bioaccumulative

### Key literature references and sources for data

- UN Recommendations on the Transport of Dangerous Good
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

### List of relevant phrases (code and full text as stated in chapter 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

# Safety data sheet

Safe Work Australia - Code of Practice



## Oil of Scotch pine needles, artificial

article number: **3306**

Code	Text
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
H411	toxic to aquatic life with long lasting effects

### Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.