

# SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Version 6.12

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GENERIC EU MSDS - NO COUNTRY SPECIFIC DATA - NO OEL DATA

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

### 1.1 Product identifiers

Product name : Essential oil

Product Number : Y0000749

Brand : Sigma-Aldrich

REACH No. : This product is a mixture. REACH Registration Number see section 3.

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

Identified uses : Laboratory chemicals, Manufacture of substances

Uses advised against : For R&D use only. Not for pharmaceutical, household or other uses.

### 1.3

CHEMIKART

### 1.4 Emergency telephone

Emergency Phone # : 000 800 1007 141 (CHEMTREC)

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

Flammable liquids, (Category 3) H226: Flammable liquid and vapor.

Skin irritation, (Category 2) H315: Causes skin irritation.

Eye irritation, (Category 2) H319: Causes serious eye irritation.

Skin sensitization, (Category 1) H317: May cause an allergic skin reaction.

Aspiration hazard, (Category 1) H304: May be fatal if swallowed and enters airways.

Long-term (chronic) aquatic hazard, (Category 2)

H411: Toxic to aquatic life with long lasting effects.

## 2.2 Label elements

### Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal Word	Danger
Hazard Statements	
H226	Flammable liquid and vapor.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.
Precautionary Statements	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P331	Do NOT induce vomiting.
Supplemental Hazard Statements	none

### Reduced Labeling (<= 125 ml)

Pictogram

Signal Word	Danger
Hazard Statements	
H317	May cause an allergic skin reaction.
H304	May be fatal if swallowed and enters airways.
Precautionary Statements	
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P331	Do NOT induce vomiting.
Supplemental Hazard Statements	none

## 2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

Ecological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Toxicological information:

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

## SECTION 3: Composition/information on ingredients

### 3.2 Mixtures

Component		Classification	Concentration
<b>Cineole</b>			
CAS-No.	470-82-6	Flam. Liq. 3; Skin Sens. 1; H226, H317	>= 10 - < 20 %
EC-No.	207-431-5		
	*		
<b>Linalool</b>			
CAS-No.	78-70-6	Skin Irrit. 2; Eye Irrit. 2; Skin Sens. 1; H315, H319, H317	>= 10 - < 20 %
EC-No.	201-134-4		
Index-No.	603-235-00-2		
	*		
<b>beta-Caryophyllene</b>			
CAS-No.	87-44-5	Skin Sens. 1B; Asp. Tox. 1; H317, H304	>= 10 - < 20 %
EC-No.	201-746-1		
	*		
<b>hexan-1-ol</b>			
CAS-No.	111-27-3	Flam. Liq. 3; Acute Tox. 4; Eye Irrit. 2; H226, H302, H312, H319	>= 10 - < 20 %
EC-No.	203-852-3		
Index-No.	603-059-00-6		
Registration number	01-2119487967-12-XXXX		
<b>Decanal</b>			
CAS-No.	112-31-2	Eye Irrit. 2; Aquatic Chronic 3; H319, H412	>= 10 - < 20 %
EC-No.	203-957-4		
	*		
<b>3-acetoxy-3,7-dimethyl-1,6-octadiene</b>			
CAS-No.	115-95-7	Skin Irrit. 2; Eye Irrit. 2; Skin Sens. 1B; H315, H319, H317	>= 10 - < 20 %
EC-No.	204-116-4		
	*		
<b>Benzyl salicylate</b>			
CAS-No.	118-58-1	Eye Irrit. 2; Skin Sens. 1B; Aquatic Chronic 3; H319, H317, H412	>= 10 - < 20 %
EC-No.	204-262-9		
Index-No.	607-754-00-5		
	*		
<b>2-Methoxy-4-(2-propenyl)phenol</b>			
CAS-No.	97-53-0	Eye Irrit. 2; Skin Sens. 1; H319, H317	>= 10 - < 20 %
EC-No.	202-589-1		
	*		

<b>pin-2(3)-ene</b>			
CAS-No.	80-56-8	Flam. Liq. 3; Skin Irrit. 2; Skin Sens. 1; Asp. Tox. 1; Aquatic Acute 1; Aquatic Chronic 1; H226, H315, H317, H304, H400, H410 M-Factor - Aquatic Acute: 1	>= 10 - < 20 %
EC-No.	201-291-9		
	*		

\*A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, or the annual tonnage does not require a registration.

For the full text of the H-Statements mentioned in this Section, see Section 16.

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## SECTION 4: First aid measures

### 4.1 Description of first-aid measures

#### General advice

Show this material safety data sheet to the doctor in attendance.

#### If inhaled

After inhalation: fresh air.

#### In case of skin contact

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

#### In case of eye contact

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

#### If swallowed

After swallowing: caution if victim vomits. Risk of aspiration! Keep airways free. Pulmonary failure possible after aspiration of vomit. Call a physician immediately.

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

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

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

No data available

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## SECTION 5: Firefighting measures

### 5.1 Extinguishing media

#### Suitable extinguishing media

Foam Carbon dioxide (CO<sub>2</sub>) Dry powder

#### Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

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

Carbon oxides

Combustible.

Forms explosive mixtures with air at elevated temperatures.

Development of hazardous combustion gases or vapours possible in the event of fire.

### 5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

### 5.4 Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

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## SECTION 6: Accidental release measures

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

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. For personal protection see section 8.

### 6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

### 6.3 Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

### 6.4 Reference to other sections

For disposal see section 13.

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## SECTION 7: Handling and storage

### 7.1 Precautions for safe handling

#### Advice on protection against fire and explosion

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

#### Hygiene measures

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance. For precautions see section 2.2.

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

#### Storage conditions

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition.

#### Storage stability Recommended storage temperature

2 - 8 °C

#### Storage class

Storage class (TRGS 510): 3: Flammable liquids

### 7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

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## SECTION 8: Exposure controls/personal protection

### 8.1 Control parameters

#### Ingredients with workplace control parameters

### 8.2 Exposure controls

#### Personal protective equipment

##### Eye/face protection

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

##### Skin protection

required

##### Body Protection

Flame retardant antistatic protective clothing.

##### Respiratory protection

required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: Filter type ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

##### Control of environmental exposure

Do not let product enter drains. Risk of explosion.

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## SECTION 9: Physical and chemical properties

### 9.1 Information on basic physical and chemical properties

- |   |                   |
|---|-------------------|
| a) Physical state                               | liquid            |
| b) Color  | No data available |
| c) Odor   | No data available |
| d) Melting point/freezing point                 | No data available |
| e) Initial boiling point and boiling range      | No data available |
| f) Flammability (solid, gas)                    | No data available |
| g) Upper/lower flammability or explosive limits | No data available |
| h) Flash point                                  | No data available |
| i) Autoignition temperature                     | No data available |
| j) Decomposition temperature                    | No data available |

- |  |  |
|--|--|
| k) pH  | No data available  |
| l) Viscosity                                 | Viscosity, kinematic: No data available<br>Viscosity, dynamic: No data available |
| m) Water solubility                          | No data available  |
| n) Partition coefficient:<br>n-octanol/water | No data available  |
| o) Vapor pressure                            | No data available  |
| p) Density                                   | No data available  |
| Relative density                             | No data available  |
| q) Relative vapor<br>density                 | No data available  |
| r) Particle<br>characteristics               | No data available  |
|  |  |
| s) Explosive properties                      | Not classified as explosive.   |
| t) Oxidizing properties                      | none   |

## 9.2 Other safety information

No data available

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## SECTION 10: Stability and reactivity

### 10.1 Reactivity

Vapor/air-mixtures are explosive at intense warming.

### 10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

Heating.

### 10.5 Incompatible materials

Strong oxidizing agents

### 10.6 Hazardous decomposition products

In the event of fire: see section 5

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## SECTION 11: Toxicological information

### 11.1 Information on toxicological effects

#### Mixture

#### Acute toxicity

Oral: No data available

Symptoms: Possible symptoms:, mucosal irritations

Dermal: No data available

#### Skin corrosion/irritation

Remarks: Mixture causes skin irritation.

**Serious eye damage/eye irritation**

Remarks: Mixture causes serious eye irritation.

**Respiratory or skin sensitization**

Mixture may cause an allergic skin reaction.

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

Aspiration hazard, Aspiration may cause pulmonary edema and pneumonitis.

**11.2 Additional Information****Endocrine disrupting properties****Product:**

Assessment

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

**Components****Cineole****Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

**Skin corrosion/irritation**

Skin - reconstructed human epidermis (RhE)

Result: No skin irritation

(OECD Test Guideline 439)

**Serious eye damage/eye irritation**

Eyes - Bovine cornea

Result: No eye irritation

(OECD Test Guideline 437)

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse



Result: positive  
(OECD Test Guideline 429)

**Germ cell mutagenicity**

Test Type: Ames test  
Test system: *S. typhimurium*  
Result: negative  
Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster ovary cells  
Result: negative  
Remarks: (ECHA)  
Method: OECD Test Guideline 474  
Species: Rat - male and female  
Result: negative

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Linalool**

**Acute toxicity**

LD50 Oral - Mouse - male and female - 2.200 mg/kg  
(OECD Test Guideline 401)  
LC50 Inhalation - Mouse - female - 4 h - > 5 mg/l - vapor  
Remarks: (ECHA)  
LD50 Dermal - Rabbit - 5.610 mg/kg  
(OECD Test Guideline 402)

**Skin corrosion/irritation**

Skin - Rabbit  
Result: Irritating to skin. - 4 h  
(OECD Test Guideline 404)

**Serious eye damage/eye irritation**

Eyes - Rabbit  
Result: Irritating to eyes.  
(OECD Test Guideline 405)

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse

Result: May cause sensitization by skin contact.  
(OECD Test Guideline 429)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: mouse lymphoma cells

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster ovary cells

Result: negative

Method: OECD Test Guideline 474

Species: Mouse - male and female

Result: negative

Method: OECD Test Guideline 474

Species: Mouse - male and female - Red blood cells (erythrocytes)

Result: negative

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

**Aspiration hazard**

No data available

**beta-Caryophyllene**

**Acute toxicity**

LD50 Oral - Mouse - male - > 5.000 mg/kg

Remarks: (ECHA)

Inhalation: No data available

Dermal: No data available

**Skin corrosion/irritation**

Skin - in vitro test

Result: No skin irritation

(OECD Test Guideline 439)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: No eye irritation

(OECD Test Guideline 405)

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Guinea pig

Result: positive  
(OECD Test Guideline 429)

**Germ cell mutagenicity**

Test Type: Micronucleus test

Test system: Human lymphocytes

Result: negative

Test Type: Ames test

Test system: *S. typhimurium*

Result: negative

Test Type: gene mutation test

Test system: mouse lymphoma cells

Result: Equivocal evidence.

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

May be fatal if swallowed and enters airways.

**hexan-1-ol**

**Acute toxicity**

LD50 Oral - Rat - 720 mg/kg

Remarks: Liver:Fatty liver degeneration.  
Kidney, Ureter, Bladder:Other changes.

Blood:Other changes.

LC50 Inhalation - Rat - male and female - 4 h - > 2,05 mg/l - vapor

Remarks: (ECHA)

(Regulation (EC) No 1272/2008, Annex VI)

LD50 Dermal - Rabbit - male and female - > 1.500 - < 2.000 mg/kg

(OECD Test Guideline 402)

**Skin corrosion/irritation**

Skin - Rabbit

Result: Mild skin irritation - 4 h

(OECD Test Guideline 404)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Eye irritation - 4 h

(OECD Test Guideline 405)

**Respiratory or skin sensitization**

Maximization Test - Guinea pig

Result: negative  
(OECD Test Guideline 406)

**Germ cell mutagenicity**

Test Type: Ames test  
Test system: *S. typhimurium*  
Result: negative  
Test Type: In vitro mammalian cell gene mutation test  
Test system: mouse lymphoma cells  
Result: negative  
Test Type: Chromosome aberration test in vitro  
Test system: Chinese hamster fibroblasts  
Result: negative  
Method: OECD Test Guideline 474  
Species: Mouse - male and female  
Result: negative

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**Decanal**

**Acute toxicity**

LD50 Oral - Mouse - > 41.750 mg/kg  
Remarks: Behavioral:Excitement.  
Diarrhea  
Skin and Appendages: Other: Hair.  
Inhalation: No data available  
LD50 Dermal - Rabbit - 5.040 mg/kg  
Remarks: (RTECS)

**Skin corrosion/irritation**

Skin - Rabbit  
Result: No skin irritation  
(Directive 67/548/EEC, Annex V, B.4.)

**Serious eye damage/eye irritation**

Eyes - Rabbit  
Result: Eye irritation  
(Regulation (EC) No. 440/2008, Annex, B.5)

**Respiratory or skin sensitization**

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**3-acetoxy-3,7-dimethyl-1,6-octadiene****Acute toxicity**

LD50 Oral - Rat - male and female - > 9.000 mg/kg

Remarks: (ECHA)

Inhalation: No data available

LD50 Dermal - Rabbit - > 5.000 mg/kg

Remarks: (ECHA)

**Skin corrosion/irritation**

Skin - Rabbit

Result: Irritating to skin. - 4 h

(OECD Test Guideline 404)

**Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Causes serious eye irritation.

Remarks: Causes serious eye irritation.  
(ECHA)

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse

Result: positive

(OECD Test Guideline 429)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Mouse lymphoma test

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Human lymphocytes

Result: negative

Method: OECD Test Guideline 474

Species: Mouse - male and female - Bone marrow

Result: negative

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

## **Specific target organ toxicity - repeated exposure**

### **Aspiration hazard**

No data available

## **Benzyl salicylate**

### **Acute toxicity**

Oral: No data available

Inhalation: No data available

Dermal: No data available

### **Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation

(OECD Test Guideline 404)

### **Serious eye damage/eye irritation**

Eyes - In vitro study

Result: Moderate eye irritation

(OECD Test Guideline 437)

### **Respiratory or skin sensitization**

in vivo assay - Mouse

May cause allergic skin reaction.

(OECD Test Guideline 429)

### **Germ cell mutagenicity**

No data available

### **Carcinogenicity**

No data available

### **Reproductive toxicity**

No data available

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

No data available

## **Specific target organ toxicity - repeated exposure**

No data available

### **Aspiration hazard**

No data available

## **2-Methoxy-4-(2-propenyl)phenol**

### **Acute toxicity**

LD50 Oral - Rat - male - > 2.000 mg/kg

(OECD Test Guideline 423)

LD50 Inhalation - Rat - male - 4 h - > 2,6 mg/l - aerosol

(OECD Test Guideline 403)

Dermal: No data available

### **Skin corrosion/irritation**

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

### **Serious eye damage/eye irritation**

Eyes - Rabbit

Result: Irritating to eyes.

(OECD Test Guideline 405)

**Respiratory or skin sensitization**

Local lymph node assay (LLNA) - Mouse

Result: positive

(OECD Test Guideline 429)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Test Type: unscheduled DNA synthesis assay

Test system: rat hepatocytes

Result: negative

Method: OECD Test Guideline 474

Species: Rat - female

Result: negative

Method: OECD Test Guideline 486

Species: Rat - male

Result: negative

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

**pin-2(3)-ene**

**Acute toxicity**

LD50 Oral - Rat - 3.700 mg/kg

Remarks: Brain and Coverings:Recordings from specific areas of CNS.

Behavioral:Somnolence (general depressed activity).

Lungs, Thorax, or Respiration:Other changes.

Inhalation: No data available

Dermal: No data available

**Skin corrosion/irritation**

Skin - Human

Result: Irritating to skin. - 15 min

(EPISKIN Human Skin Model Test)

**Serious eye damage/eye irritation**

Remarks: No data available

**Respiratory or skin sensitization**

in vivo assay - Mouse

Result: May cause sensitization by skin contact.  
(OECD Test Guideline 429)

**Germ cell mutagenicity**

Test Type: Ames test

Test system: *S. typhimurium*

Result: negative

**Carcinogenicity**

No data available

**Reproductive toxicity**

No data available

**Specific target organ toxicity - single exposure**

No data available

**Specific target organ toxicity - repeated exposure**

No data available

**Aspiration hazard**

No data available

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## SECTION 12: Ecological information

### 12.1 Toxicity

**Mixture**

No data available

### 12.2 Persistence and degradability

No data available

### 12.3 Bioaccumulative potential

No data available

### 12.4 Mobility in soil

No data available

### 12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

### 12.6 Endocrine disrupting properties

**Product:**

Assessment : The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

### 12.7 Other adverse effects

No data available

**Components**

**Cineole**

Toxicity to fish semi-static test LC50 - *Oncorhynchus mykiss* (rainbow trout) - 57 mg/l - 96 h (OECD Test Guideline 203)

Toxicity to daphnia static test EC50 - *Daphnia magna* (Water flea) - > 100 mg/l -



and other aquatic invertebrates	48 h (OECD Test Guideline 202)
Toxicity to algae	static test EC50 - <i>Pseudokirchneriella subcapitata</i> (green algae) - > 74 mg/l - 72 h (OECD Test Guideline 201)
Toxicity to bacteria	static test EC50 - activated sludge - > 100 mg/l - 3 h (OECD Test Guideline 209)

#### **Linalool**

Toxicity to fish	static test LC50 - <i>Oncorhynchus mykiss</i> (rainbow trout) - 27,8 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - <i>Daphnia magna</i> (Water flea) - 59 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test ErC50 - <i>Desmodesmus subspicatus</i> (green algae) - 156,7 mg/l - 96 h (DIN 38412)  static test EC10 - <i>Desmodesmus subspicatus</i> (green algae) - 54,3 mg/l - 96 h (DIN 38412)
Toxicity to bacteria	static test EC50 - activated sludge - > 100 mg/l - 30 h (OECD Test Guideline 209)

#### **beta-Caryophyllene**

Toxicity to daphnia and other aquatic invertebrates	static test EC50 - <i>Daphnia magna</i> Straus (Water flea) - > 0,17 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	static test ErC50 - <i>Pseudokirchneriella subcapitata</i> (green algae) - > 0,033 mg/l - 72 h (OECD Test Guideline 201)

#### **hexan-1-ol**

Toxicity to fish	flow-through test LC50 - <i>Pimephales promelas</i> (fathead minnow) - 97,2 - 97,5 mg/l - 96 h (US-EPA)
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - <i>Daphnia magna</i> (Water flea) - 7 mg/l - 48 h (OECD Test Guideline 202) Remarks: (ECHA)
Toxicity to algae	static test ErC50 - <i>Pseudokirchneriella subcapitata</i> (green algae) - 79,7 mg/l - 72 h (OECD Test Guideline 201)

#### **Decanal**

Toxicity to fish	semi-static test LC50 - <i>Oncorhynchus mykiss</i> (rainbow trout) - 1,45 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia	semi-static test EC50 - <i>Daphnia magna</i> (Water flea) - 1,17 mg/l

and other aquatic invertebrates - 48 h  
(OECD Test Guideline 202)

Toxicity to algae static test NOEC - *Pseudokirchneriella subcapitata* (green algae) - 0,759 mg/l - 72 h  
(OECD Test Guideline 201)

static test EC50 - *Pseudokirchneriella subcapitata* (algae) - 4,5 mg/l - 72 h  
(OECD Test Guideline 201)

### **3-acetoxy-3,7-dimethyl-1,6-octadiene**

Toxicity to fish flow-through test LC50 - *Cyprinus carpio* (Carp) - 11 mg/l - 96 h  
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates static test EC50 - *Daphnia magna* (Water flea) - 59 mg/l - 48 h  
(OECD Test Guideline 202)

### **Benzyl salicylate**

Toxicity to fish LC50 - *Danio rerio* (zebra fish) - 1,03 mg/l - 96 h  
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates static test EC50 - *Daphnia magna* (Water flea) - 1,16 mg/l - 48 h  
(OECD Test Guideline 202)

static test NOEC - *Daphnia magna* (Water flea) - 0,894 mg/l - 48 h  
(OECD Test Guideline 202)

Toxicity to algae ErC50 - *Pseudokirchneriella subcapitata* (green algae) - 1,29 mg/l - 72 h  
(OECD Test Guideline 201)

NOEC - *Pseudokirchneriella subcapitata* (green algae) - 0,502 mg/l - 72 h  
(OECD Test Guideline 201)

### **2-Methoxy-4-(2-propenyl)phenol**

Toxicity to fish LC50 - *Danio rerio* (zebra fish) - 13 mg/l - 96 h  
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates static test EC50 - *Daphnia* - 1,13 mg/l - 48 h  
(OECD Test Guideline 202)

Toxicity to algae static test EC50 - *Desmodesmus subspicatus* (green algae) - 24 mg/l - 72 h  
(OECD Test Guideline 201)

### **pin-2(3)-ene**

Toxicity to fish LC50 - *Pimephales promelas* (fathead minnow) - 0,28 mg/l - 96,0 h

Toxicity to daphnia and other aquatic invertebrates EC50 - *Daphnia magna* (Water flea) - 0,475 mg/l - 48 h  
(OECD Test Guideline 202)

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## SECTION 13: Disposal considerations

### 13.1 Waste treatment methods

No data available

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## SECTION 14: Transport information

### 14.1 UN number

ADR/RID: 1993

IMDG: 1993

IATA: 1993

### 14.2 UN proper shipping name

ADR/RID: FLAMMABLE LIQUID, N.O.S. (pin-2(3)-ene, Cineole)

IMDG: FLAMMABLE LIQUID, N.O.S. (pin-2(3)-ene, Cineole)

IATA: Flammable liquid, n.o.s. (pin-2(3)-ene, Cineole)

### 14.3 Transport hazard class(es)

ADR/RID: 3

IMDG: 3

IATA: 3

### 14.4 Packaging group

ADR/RID: III

IMDG: III

IATA: III

### 14.5 Environmental hazards

ADR/RID: yes

IMDG Marine pollutant: yes

IATA: no

### 14.6 Special precautions for user

Tunnel restriction code : (D/E)

Further information : No data available

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## SECTION 15: Regulatory information

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

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

#### National legislation

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances.

P5c

FLAMMABLE LIQUIDS

E2

ENVIRONMENTAL HAZARDS

#### Other regulations

Take note of Dir 94/33/EC on the protection of young people at work.

### 15.2 Chemical Safety Assessment

For this product a chemical safety assessment was not carried out

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## SECTION 16: Other information

### Full text of H-Statements

H226	Flammable liquid and vapor.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

### Full text of other abbreviations

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - Agreement concerning the International Carriage of Dangerous Goods by Road; AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

### Classification of the mixture

Flam. Liq.3	H226
Skin Irrit.2	H315
Eye Irrit.2	H319
Skin Sens.1	H317

### Classification procedure:

Calculation method
Calculation method
Calculation method
Calculation method

Asp. Tox.1	H304	Calculation method
Aquatic Chronic2	H411	Calculation method

### **Further information**

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See [www.sigma-aldrich.com](http://www.sigma-aldrich.com) and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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