# Safety data sheet

acc. to Safe Work Australia - Code of Practice

**Oil of cinnamon , natural**

article number: **A432**
Version: **GHS 1.0 en**

date of compilation: 2021-04-09

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

### 1.1 Product identifier

Identification of the substance — **Oil of cinnamon** , natural

Article number — A432

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

Relevant identified uses: — Laboratory and analytical use
Laboratory chemical

Uses advised against: — 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 |
|---|---|---|---|---|
| NSW Poisons Information Centre Childrens Hospital | Hawkesbury Road | 2145 West-mead, NSW | 131126 | |

## SECTION 2: Hazards identification

### 2.1 Classification of the substance or mixture

**Classification acc. to GHS**

| Section | Hazard class | Cat-egory | Hazard class and category | Hazard statement |
|---|---|---|---|---|
| 2.6 | Flammable liquid | 4 | Flam. Liq. 4 | H227 |
| 3.1D | Acute toxicity (dermal) | 4 | Acute Tox. 4 | H312 |
| 3.2 | Skin corrosion/irritation | 2 | Skin Irrit. 2 | H315 |
| 3.3 | Serious eye damage/eye irritation | 2A | Eye Irrit. 2A | H319 |
| 3.4S | Skin sensitisation | 1 | Skin Sens. 1 | H317 |

For full text of abbreviations: see SECTION 16

**The most important adverse physicochemical, human health and environmental effects**

The product is combustible and can be ignited by potential ignition sources.

## 2.2 Label elements

**Labelling**

**Signal word** **Warning**

**Pictograms**

GHS07

**Hazard statements**

| | |
|---|---|
| H227 | Combustible liquid |
| H312 | Harmful in contact with skin |
| H315 | Causes skin irritation |
| H317 | May cause an allergic skin reaction |
| H319 | Causes serious eye irritation |

**Precautionary statements**

**Precautionary statements - prevention**

| | |
|---|---|
| P210 | Keep away from heat/sparks/open flames/hot surfaces. - No smoking |
| P261 | Avoid breathing dust/fume/gas/mist/vapours/spray |
| P280 | Wear protective gloves/protective clothing |

**Precautionary statements - response**

| | |
|---|---|
| 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 |
| P312 | Call a POISON CENTER or doctor/physician if you feel unwell |
| P370+P378 | In case of fire: Use sand, carbon dioxide or powder extinguisher for extinction |

**Precautionary statements - disposal**

| | |
|---|---|
| P501 | Dispose of contents/container to industrial combustion plant |

**Hazardous ingredients for labelling:** Cinnamaldehyde, DL-α-Pinene, β-Caryophyllene, Linalool, DL-Limonene

## 2.3 Other hazards

This material is combustible, but will not ignite readily.

**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 sub-stance | Identifier | Wt% | Classification acc. to GHS | Pictograms | Notes |
|---|---|---|---|---|---|
| Cinnamaldehyde | CAS No<br>104-55-2 | 50 – < 75 | Acute Tox. 4 / H312<br>Skin Irrit. 2 / H315<br>Eye Irrit. 2A / H319<br>Skin Sens. 1 / H317 |  | |
| Eugenol | CAS No<br>97-53-0 | 10 – < 25 | Acute Tox. 4 / H302<br>Eye Irrit. 2A / H319 |  | |
| β-Caryophyllene | CAS No<br>87-44-5 | < 10 | Skin Sens. 1 / H317<br>Asp. Tox. 1 / H304 |  | |
| Linalool | CAS No<br>78-70-6 | < 5 | Flam. Liq. 4 / H227<br>Skin Irrit. 2 / H315<br>Eye Irrit. 2A / H319<br>Skin Sens. 1B / H317 |  | |
| Benzoic acid benzyl ester | CAS No<br>120-51-4 | < 1 | Acute Tox. 4 / H302 |  | |
| DL-Limonene | CAS No<br>138-86-3 | < 1 | Flam. Liq. 3 / H226<br>Skin Irrit. 2 / H315<br>Skin Sens. 1 / H317 |  | C(a) |
| DL-α-Pinene | CAS No<br>80-56-8 | < 1 | Flam. Liq. 3 / H226<br>Acute Tox. 4 / H302<br>Skin Irrit. 2 / H315<br>Skin Sens. 1A / H317<br>Asp. Tox. 1 / H304 |  | |
| Coumarin | CAS No<br>91-64-5 | < 1 | Acute Tox. 3 / H301<br>STOT RE 2 / H373 |  | |

**Notes**
C(a): Mixture of isomers

For full text of abbreviations: 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. After contact with skin, wash immediately with plenty of water. In case of skin reactions, consult a physician. In case of skin irritation, consult a physician.

**Following eye contact**

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

**Following ingestion**

Rinse mouth. Call a doctor if you feel unwell.

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

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 firefighting measures to the fire surroundings
water spray, dry extinguishing powder, BC-powder, carbon dioxide ($CO_2$)

**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 ($CO_2$), 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. 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. 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.

**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.

**Advice on general occupational hygiene**

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs.

### 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:**

**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 of components of the mixture**

| Name of substance | CAS No | End-point | Threshold level | Protection goal, route of exposure | Used in | Exposure time |
|---|---|---|---|---|---|---|
| Eugenol | 97-53-0 | DNEL | 21.2 mg/m³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Eugenol | 97-53-0 | DNEL | 6 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |
| Linalool | 78-70-6 | DNEL | 2.8 mg/m³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Linalool | 78-70-6 | DNEL | 16.5 mg/m³ | 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 |
| Benzoic acid benzyl ester | 120-51-4 | DNEL | 5.1 mg/m³ | human, inhalatory | worker (industry) | chronic - systemic effects |
| Benzoic acid benzyl ester | 120-51-4 | DNEL | 102 mg/m³ | human, inhalatory | worker (industry) | acute - systemic effects |
| Benzoic acid benzyl ester | 120-51-4 | DNEL | 2.6 mg/kg bw/day | human, dermal | worker (industry) | chronic - systemic effects |
| DL-α-Pinene | 80-56-8 | DNEL | 3.8 mg/m³ | 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 |

**Relevant PNECs of components of the mixture**

| Name of substance | CAS No | End-point | Threshold level | Organism | Environmental compartment | Exposure time |
|---|---|---|---|---|---|---|
| Eugenol | 97-53-0 | PNEC | 1.13 µg/l | aquatic organisms | freshwater | short-term (single instance) |
| Eugenol | 97-53-0 | PNEC | 0.113 µg/l | aquatic organisms | marine water | short-term (single instance) |
| Eugenol | 97-53-0 | PNEC | 0.081 mg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |

**Relevant PNECs of components of the mixture**

| Name of substance | CAS No | End-point | Threshold level | Organism | Environmental compartment | Exposure time |
|---|---|---|---|---|---|---|
| Eugenol | 97-53-0 | PNEC | 0.008 mg/kg | aquatic organisms | marine sediment | short-term (single instance) |
| Eugenol | 97-53-0 | PNEC | 0.015 mg/kg | terrestrial organisms | soil | short-term (single instance) |
| 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) |
| Benzoic acid benzyl ester | 120-51-4 | PNEC | 0.017 mg/l | aquatic organisms | freshwater | short-term (single instance) |
| Benzoic acid benzyl ester | 120-51-4 | PNEC | 0.002 mg/l | aquatic organisms | marine water | short-term (single instance) |
| Benzoic acid benzyl ester | 120-51-4 | PNEC | 100 mg/l | aquatic organisms | sewage treatment plant (STP) | short-term (single instance) |
| Benzoic acid benzyl ester | 120-51-4 | PNEC | 10.66 mg/kg | aquatic organisms | freshwater sediment | short-term (single instance) |
| Benzoic acid benzyl ester | 120-51-4 | PNEC | 1.07 mg/kg | aquatic organisms | marine sediment | short-term (single instance) |
| Benzoic acid benzyl ester | 120-51-4 | PNEC | 2.12 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) |

## 8.2 Exposure controls

### Individual protection measures (personal protective equipment)

### Eye/face protection

Use safety goggle with side protection.

### Skin protection

**• 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**

Butyl caoutchouc (butyl rubber)

**• material thickness**

>0,3 mm

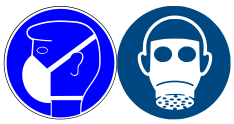
**• breakthrough times of the glove material**

>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

| | |
|---|---|
| Physical state | liquid |
| Colour | clear - yellow - yellowish brown |
| Odour | characteristic |
| Melting point/freezing point | not determined |
| Boiling point or initial boiling point and boiling range | not determined |
| Flammability | flammable liquid in accordance with GHS criteria |
| Lower and upper explosion limit | not determined |
| Flash point | >63 °C |
| Auto-ignition temperature | not determined |
| Decomposition temperature | not relevant |
| pH (value) | not determined |
| Kinematic viscosity | not determined |
| Solubility(ies) | |
| Water solubility | not determined |
| Partition coefficient | |
| Partition coefficient n-octanol/water (log value): | this information is not available |
| Vapour pressure | not determined |
| Density | 1.02 – 1.03 $^{g}/_{cm^3}$ at 20 °C |
| Particle characteristics | No data available. |
| 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: | |
| Refractive index | 1.58 – 1.6 (20 °C) |

## 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 toxicological effects

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 acc. to GHS**

**Acute toxicity**

Harmful in contact with skin.

**Acute toxicity estimate (ATE) of components of the mixture**

| Name of substance | CAS No | Exposure route | ATE |
|---|---|---|---|
| Cinnamaldehyde | 104-55-2 | dermal | 1,260 $^{mg}/_{kg}$ |
| Eugenol | 97-53-0 | oral | 1,930 $^{mg}/_{kg}$ |
| Coumarin | 91-64-5 | oral | 293 $^{mg}/_{kg}$ |
| 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 |
|---|---|---|---|---|---|
| Cinnamaldehyde | 104-55-2 | oral | LD50 | 2,220 $^{mg}/_{kg}$ | rat |
| Cinnamaldehyde | 104-55-2 | dermal | LD50 | 1,260 $^{mg}/_{kg}$ | rabbit |

| Acute toxicity of components of the mixture | | | | | |
|---|---|---|---|---|---|
| **Name of substance** | **CAS No** | **Exposure route** | **Endpoint** | **Value** | **Species** |
| Eugenol | 97-53-0 | oral | LD50 | 1,930 $^{mg}/_{kg}$ | rat |
| β-Caryophyllene | 87-44-5 | oral | LD50 | >5,000 $^{mg}/_{kg}$ | mouse |
| Linalool | 78-70-6 | oral | LD50 | 2,790 $^{mg}/_{kg}$ | rat |
| Linalool | 78-70-6 | dermal | LD50 | 5,610 $^{mg}/_{kg}$ | rabbit |
| Benzoic acid benzyl ester | 120-51-4 | oral | LD50 | >2,000 $^{mg}/_{kg}$ | rat |
| Coumarin | 91-64-5 | oral | LD50 | 293 $^{mg}/_{kg}$ | rat |
| 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 |
| DL-Limonene | 138-86-3 | oral | LD50 | 5,300 $^{mg}/_{kg}$ | rat |

**Skin corrosion/irritation**

Causes skin irritation.

**Serious eye damage/eye irritation**

Causes serious eye irritation.

**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**

Shall not be classified 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**

Shall not be classified as presenting an aspiration hazard.

**Symptoms related to the physical, chemical and toxicological characteristics**

**• If swallowed**

Data are not available.

**• If in eyes**

Causes serious eye irritation

**• If inhaled**

Data are not available.

**• If on skin**

causes skin irritation, May produce an allergic reaction, pruritis, localised redness

**• Other information**

none

### 11.2 Endocrine disrupting properties

None of the ingredients are listed.

## 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 sub-stance | CAS No | Endpoint | Value | Species | Exposure time |
|---|---|---|---|---|---|
| Cinnamaldehyde | 104-55-2 | LC50 | 2.35 $^{mg}/_{l}$ | fish | 96 h |
| Cinnamaldehyde | 104-55-2 | EC50 | 119.6 $^{mg}/_{l}$ | aquatic invertebrates | 48 h |
| Eugenol | 97-53-0 | EC50 | 1.05 $^{mg}/_{l}$ | daphnia magna | 48 h |
| Eugenol | 97-53-0 | ErC50 | 24 $^{mg}/_{l}$ | 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 |
| 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 |
| Benzoic acid benzyl ester | 120-51-4 | LC50 | 0.29 $^{mg}/_{l}$ | striped brill | 96 h |
| Benzoic acid benzyl ester | 120-51-4 | EC50 | 3.09 $^{mg}/_{l}$ | aquatic invertebrates | 48 h |
| Benzoic acid benzyl ester | 120-51-4 | ErC50 | 0.475 $^{mg}/_{l}$ | algae | 72 h |
| Coumarin | 91-64-5 | EC50 | 30.6 $^{mg}/_{l}$ | daphnia pulex | 48 h |
| Coumarin | 91-64-5 | LC50 | 56 $^{mg}/_{l}$ | Poecilia reticulata | 96 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 |
| DL-Limonene | 138-86-3 | EC50 | 17 $^{mg}/_{l}$ | daphnia magna | 48 h |
| DL-Limonene | 138-86-3 | LC50 | 80 $^{mg}/_{l}$ | rainbow trout (Onco-rhynchus mykiss) | 96 h |

| Aquatic toxicity (chronic) of components of the mixture | | | | | |
|---|---|---|---|---|---|
| **Name of substance** | **CAS No** | **Endpoint** | **Value** | **Species** | **Exposure time** |
| Cinnamaldehyde | 104-55-2 | EC50 | 0.402 $^{mg}/_{l}$ | aquatic invertebrates | 21 d |
| Linalool | 78-70-6 | EC50 | >100 $^{mg}/_{l}$ | microorganisms | 30 min |
| Benzoic acid benzyl ester | 120-51-4 | LC50 | 11 $^{mg}/_{l}$ | aquatic invertebrates | 24 h |
| Benzoic acid benzyl ester | 120-51-4 | EC50 | >10,000 $^{mg}/_{l}$ | microorganisms | 3 h |

### Biodegradation

Data are not available.

## 12.2 Process of degradability

| Degradability of components of the mixture | | | | | | |
|---|---|---|---|---|---|---|
| **Name of substance** | **CAS No** | **Process** | **Degradation rate** | **Time** | **Method** | **Source** |
| Cinnamaldehyde | 104-55-2 | biotic/abiotic | 100 % | 28 d | | |
| Cinnamaldehyde | 104-55-2 | carbon dioxide generation | 89 % | 7 d | | ECHA |
| Eugenol | 97-53-0 | biotic/abiotic | 82 % | 28 d | | |
| Eugenol | 97-53-0 | oxygen depletion | 50 % | 7 d | | ECHA |
| β-Caryophyllene | 87-44-5 | oxygen depletion | 10 % | 28 d | | ECHA |
| Linalool | 78-70-6 | oxygen depletion | 40.9 % | 5 d | | ECHA |
| Benzoic acid benzyl ester | 120-51-4 | biotic/abiotic | 94 % | 28 d | | |
| Benzoic acid benzyl ester | 120-51-4 | oxygen depletion | 94 % | 28 d | | ECHA |
| DL-α-Pinene | 80-56-8 | oxygen depletion | 68 % | 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** |
| Cinnamaldehyde | 104-55-2 | 8 | 2.107 (25 °C) | |
| Eugenol | 97-53-0 | | 1.83 (pH value: 5.5, 30 °C) | |
| β-Caryophyllene | 87-44-5 | | 6.23 (pH value: 7, 25 °C) | |
| Linalool | 78-70-6 | | 2.9 (pH value: 7, 20 °C) | |
| Benzoic acid benzyl ester | 120-51-4 | 193.4 | 3.97 (25 °C) | |

| Bioaccumulative potential of components of the mixture | | | | |
|---|---|---|---|---|
| **Name of substance** | **CAS No** | **BCF** | **Log KOW** | **BOD5/COD** |
| Coumarin | 91-64-5 | | 1.39 (pH value: 7, 25 °C) | |
| DL-α-Pinene | 80-56-8 | | 4.83 | |
| DL-Limonene | 138-86-3 | | 4.57 | |

### 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.

### 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** | not subject to transport regulations |
| **14.2** | **UN proper shipping name** | not assigned |
| **14.3** | **Transport hazard class(es)** | not assigned |
| **14.4** | **Packing group** | not assigned |
| **14.5** | **Environmental hazards** | non-environmentally hazardous acc. to the dangerous goods regulations |

### 14.6 Special precautions for user

There is no additional information.

### 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 informationNational regulationsAdditional information(UN RTDG)**

not assigned

**International Maritime Dangerous Goods Code (IMDG) - Additional information**

Not subject to IMDG.

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

Not subject to ICAO-IATA.

## SECTION 15: Regulatory information

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

There is no additional information.

**National regulations(Australia)**

**Australian Inventory of Chemical Substances(AICS)**

All ingredients are listed or exempt from listing.

**National inventories**

| 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. | 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 |

**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 |
| 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) |
| 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 |
| EINECS | European Inventory of Existing Commercial Chemical Substances |
| ELINCS | European List of Notified Chemical Substances |
| 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 |
| GHS | "Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations |
| 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 |
| 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 |
| MARPOL | International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant") |
| NLP | No-Longer Polymer |
| PBT | Persistent, Bioaccumulative and Toxic |
| PNEC | Predicted No-Effect Concentration |
| Skin Corr. | Corrosive to skin |

| Abbr. | Descriptions of used abbreviations |
|---|---|
| Skin Irrit. | Irritant to skin |
| Skin Sens. | Skin sensitisation |
| STOT RE | Specific target organ toxicity - repeated exposure |
| vPvB | Very Persistent and very Bioaccumulative |

### Key literature references and sources for data

Safe Work Australia's Code of Practice for Labelling of Workplace Hazardous Chemicals (under WHS Regulations).

UN Recommendations on the Transport of Dangerous Good. 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 chapter 2 and 3)

| Code | Text |
|---|---|
| H226 | Flammable liquid and vapour. |
| H227 | Combustible liquid. |
| H301 | Toxic if swallowed. |
| 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. |
| H373 | May cause damage to organs through prolonged or repeated exposure. |

### Disclaimer

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