



## SAFETY DATA SHEET

### LIME OIL EXPRESSED AURANTIFOLIA

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

##### 1.1. Product identifier

Product name LIME OIL EXPRESSED AURANTIFOLIA

Product number 61688

REACH registration number 01-2120138646-51-XXXX

CAS number 90063-52-8

EC number 290-010-3

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

Identified uses Flavouring Fragrance

##### 1.3. Details of the supplier of the safety data sheet

Supplier Univar  
 Aquarius House  
 6 Mid Point Business Park  
 Bradford  
 BD3 7AY  
 +44 1274 267300  
 +44 1274 267306  
 SDS.EMEA@univarsolutions.com

##### 1.4. Emergency telephone number

Emergency telephone SGS - +32 (0)3 575 55 55 (24h)

Sds No. 61688

#### SECTION 2: Hazards identification

##### 2.1. Classification of the substance or mixture

###### Classification (EC 1272/2008)

Physical hazards Flam. Liq. 3 - H226

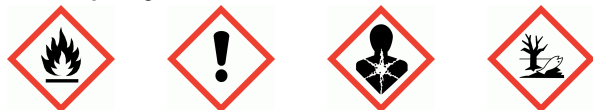
Health hazards Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Asp. Tox. 1 - H304

Environmental hazards Aquatic Chronic 2 - H411

##### 2.2. Label elements

EC number 290-010-3

###### Hazard pictograms



Signal word

Danger

## LIME OIL EXPRESSED AURANTIFOLIA

|                                 |                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hazard statements</b>        | H226 Flammable liquid and vapour.<br>H315 Causes skin irritation.<br>H317 May cause an allergic skin reaction.<br>H304 May be fatal if swallowed and enters airways.<br>H411 Toxic to aquatic life with long lasting effects.                                                                                                                                                                                               |
| <b>Precautionary statements</b> | P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.<br>P273 Avoid release to the environment.<br>P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.<br>P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.<br>P501 Dispose of contents/ container in accordance with national regulations. |
| <b>Contains</b>                 | (R)-P-MENTHA-1,8-DIENE, PIN-2-(10) ENE, P-MENTHA-1,4-DIENE, CITRAL, 2-PINENE, MYRCENE                                                                                                                                                                                                                                                                                                                                       |

### 2.3. Other hazards

This substance is not classified as PBT or vPvB according to current EU criteria.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

|                                                                                                                                                                         |                                                    |                                                                       |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------------------|
| <b>(R)-P-MENTHA-1,8-DIENE</b><br><br>CAS number: 5989-27-5<br><br>M factor (Acute) = 1                                                                                  | EC number: 227-813-5<br><br>M factor (Chronic) = 1 | <b>30-60%</b><br><br>REACH registration number: 01-2119529223-47-XXXX |
| <b>Classification</b><br>Flam. Liq. 3 - H226<br>Skin Irrit. 2 - H315<br>Skin Sens. 1 - H317<br>Asp. Tox. 1 - H304<br>Aquatic Acute 1 - H400<br>Aquatic Chronic 1 - H410 |                                                    |                                                                       |
| <b>P-MENTHA-1,4-DIENE</b><br><br>CAS number: 99-85-4                                                                                                                    | EC number: 202-794-6                               | <b>10-30%</b>                                                         |
| <b>Classification</b><br>Flam. Liq. 3 - H226<br>Repr. 2 - H361<br>Asp. Tox. 1 - H304                                                                                    |                                                    |                                                                       |

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|                                                                                                                                                                          |                        |  |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--|--------|
| PIN-2-(10) ENE                                                                                                                                                           |                        |  | 10-30% |
| CAS number: 127-91-3                                                                                                                                                     | EC number: 204-872-5   |  |        |
| M factor (Acute) = 1                                                                                                                                                     | M factor (Chronic) = 1 |  |        |
| <b>Classification</b><br>Flam. Liq. 3 - H226<br>Skin Irrit. 2 - H315<br>Skin Sens. 1B - H317<br>Asp. Tox. 1 - H304<br>Aquatic Acute 1 - H400<br>Aquatic Chronic 1 - H410 |                        |  |        |

|                                                                                             |                      |                                                  |       |
|---------------------------------------------------------------------------------------------|----------------------|--------------------------------------------------|-------|
| CITRAL                                                                                      |                      |                                                  | 5-10% |
| CAS number: 5392-40-5                                                                       | EC number: 226-394-6 | REACH registration number: 01-2119462829-23-XXXX |       |
| <b>Classification</b><br>Skin Irrit. 2 - H315<br>Eye Irrit. 2 - H319<br>Skin Sens. 1 - H317 |                      |                                                  |       |

|                                                                                                                   |                      |  |      |
|-------------------------------------------------------------------------------------------------------------------|----------------------|--|------|
| MYRCENE                                                                                                           |                      |  | 1-5% |
| CAS number: 123-35-3                                                                                              | EC number: 204-622-5 |  |      |
| <b>Classification</b><br>Flam. Liq. 3 - H226<br>Skin Irrit. 2 - H315<br>Eye Irrit. 2 - H319<br>Asp. Tox. 1 - H304 |                      |  |      |

|                                                                                                                                                                                                |                        |  |      |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|--|------|
| 2-PINENE                                                                                                                                                                                       |                        |  | 1-5% |
| CAS number: 80-56-8                                                                                                                                                                            | EC number: 201-291-9   |  |      |
| M factor (Acute) = 1                                                                                                                                                                           | M factor (Chronic) = 1 |  |      |
| <b>Classification</b><br>Flam. Liq. 3 - H226<br>Acute Tox. 4 - H302<br>Skin Irrit. 2 - H315<br>Skin Sens. 1 - H317<br>Asp. Tox. 1 - H304<br>Aquatic Acute 1 - H400<br>Aquatic Chronic 1 - H410 |                        |  |      |

The full text for all hazard statements is displayed in Section 16.

|                                  |                                 |
|----------------------------------|---------------------------------|
| <b>Product name</b>              | LIME OIL EXPRESSED AURANTIFOLIA |
| <b>REACH registration number</b> | 01-2120138646-51-XXXX           |
| <b>CAS number</b>                | 90063-52-8                      |
| <b>EC number</b>                 | 290-010-3                       |

## LIME OIL EXPRESSED AURANTIFOLIA

**Composition comments**      The data shown are in accordance with the latest EC Directives.

### SECTION 4: First aid measures

#### 4.1. Description of first aid measures

|                     |                                                                                                                                                                                                                                                      |
|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Inhalation</b>   | Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Get medical attention if symptoms are severe or persist.                                                                                        |
| <b>Ingestion</b>    | Move affected person to fresh air and keep warm and at rest in a position comfortable for breathing. Rinse mouth thoroughly with water. Give a few small glasses of water or milk to drink. Get medical attention if symptoms are severe or persist. |
| <b>Skin contact</b> | Take off immediately all contaminated clothing. Wash skin thoroughly with soap and water. Continue to rinse. Get medical attention if symptoms are severe or persist.                                                                                |
| <b>Eye contact</b>  | Rinse immediately with plenty of water. Remove any contact lenses and open eyelids wide apart. Continue to rinse for at least 15 minutes. Get medical attention if symptoms are severe or persist.                                                   |

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

|                     |                                                              |
|---------------------|--------------------------------------------------------------|
| <b>Ingestion</b>    | May be fatal if swallowed and enters airways.                |
| <b>Skin contact</b> | Causes skin irritation. May cause an allergic skin reaction. |

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

|                             |                                                                                                                          |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------|
| <b>Notes for the doctor</b> | Treat symptomatically. Contact specialist immediately poison treatment if large quantities have been ingested or inhaled |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------|

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

|                                       |                                                                                  |
|---------------------------------------|----------------------------------------------------------------------------------|
| <b>Suitable extinguishing media</b>   | Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog. |
| <b>Unsuitable extinguishing media</b> | Do not use water jet as an extinguisher, as this will spread the fire.           |

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

|                                      |                                                                                                  |
|--------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>Hazardous combustion products</b> | Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. |
|--------------------------------------|--------------------------------------------------------------------------------------------------|

#### 5.3. Advice for firefighters

|                                                      |                                                                                                                     |
|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Protective actions during firefighting</b>        | Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk. |
| <b>Special protective equipment for firefighters</b> | Wear positive-pressure self-contained breathing apparatus (SCBA) and appropriate protective clothing.               |

### SECTION 6: Accidental release measures

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

|                             |                                                                                                                                                                     |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Personal precautions</b> | Follow precautions for safe handling described in this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Provide adequate ventilation. |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|

#### 6.2. Environmental precautions

|                                  |                                                                                                                                                                                                                             |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Environmental precautions</b> | Avoid the spillage or runoff entering drains, sewers or watercourses. Spillages or uncontrolled discharges into watercourses must be reported immediately to the Environmental Agency or other appropriate regulatory body. |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

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

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**Methods for cleaning up** Absorb spillage with inert, damp, non-combustible material. Flush contaminated area with plenty of water. Collect and place in suitable waste disposal containers and seal securely. Provide adequate ventilation.

### 6.4. Reference to other sections

**Reference to other sections** Wear protective clothing as described in Section 8 of this safety data sheet. Collect and dispose of spillage as indicated in Section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

**Usage precautions** Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. In case of insufficient ventilation, wear suitable respiratory equipment. Provide adequate ventilation.

**Advice on general occupational hygiene** Do not eat, drink or smoke when using this product. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site.

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

**Storage precautions** Store in tightly-closed, original container in a dry, cool and well-ventilated place. Avoid exposure to high temperatures or direct sunlight. Store at temperatures not exceeding 5°C.

**Storage class** Flammable liquid storage.

### 7.3. Specific end use(s)

**Specific end use(s)** The identified uses for this product are detailed in Section 1.2.

## SECTION 8: Exposure controls/Personal protection

### 8.1. Control parameters

**DNEL** General population - Oral; Long term systemic effects: 2.66 mg/kg/day  
 General population - Dermal; Short term local effects: 92.9 µg/cm<sup>2</sup>  
 Workers - Dermal; Short term local effects: 185.8 µg/cm<sup>2</sup>  
 General population - Dermal; Long term systemic effects: 2.66 mg/kg/day  
 Workers - Dermal; Long term systemic effects: 5.34 mg/kg/day  
 General population - Inhalation; Long term systemic effects: 4.67 mg/m<sup>3</sup>  
 Workers - Inhalation; Long term systemic effects: 18.7 mg/m<sup>3</sup>

**PNEC** Fresh water; 5.4 µg/l  
 marine water; 0.54 µg/l  
 Intermittent release; 5.77 µg/l  
 Sediment (Freshwater); 1.3 mg/kg  
 Sediment (Marinewater); 0.13 mg/kg  
 Soil; 0.29 mg/kg  
 STP; 2.1 mg/l  
 ;

### (R)-P-MENTHA-1,8-DIENE (CAS: 5989-27-5)

**DNEL** Workers - Inhalation; Long term systemic effects: 66.7 mg/m<sup>3</sup>  
 Workers - Dermal; Long term systemic effects: 9.5 mg/kg/day  
 Consumer - Inhalation; Long term systemic effects: 16.6 mg/m<sup>3</sup>  
 Consumer - Dermal; Long term systemic effects: 4.8 mg/kg/day  
 Consumer - Oral; Long term systemic effects: 4.8 mg/kg/day

## LIME OIL EXPRESSED AURANTIFOLIA

### PNEC

Fresh water; 14 µg/l  
marine water; 1.4 µg/l  
STP; 1.8 mg/l  
Sediment (Freshwater); 3.85 mg/kg  
Sediment (Marinewater); 0.385 mg/kg  
Soil; 0.763 mg/kg

### CITRAL (CAS: 5392-40-5)

### DNEL

Workers - Inhalation; Long term systemic effects: 9 mg/m<sup>3</sup>  
Workers - Dermal; Long term systemic effects: 1.7 mg/kg/day  
Consumer - Inhalation; Long term systemic effects: 2.7 mg/m<sup>3</sup>  
Consumer - Dermal; Long term systemic effects: 1 mg/kg/day  
Consumer - Oral; Long term systemic effects: 0.6 mg/kg/day

### PNEC

Fresh water; 0.007 mg/l  
marine water; 0.001 mg/l  
STP; 1.6 mg/l  
Sediment (Freshwater); 0.125 mg/kg  
Sediment (Marinewater); 0.013 mg/kg  
Soil; 0.021 mg/kg

## 8.2. Exposure controls

### Protective equipment



#### Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

#### Hand protection

The most suitable glove should be chosen in consultation with the glove supplier/manufacture, who can provide information about the breakthrough time of the glove material. Chemical-resistant, impervious gloves complying with an approved standard should be worn if a risk assessment indicates skin contact is possible. To protect hands from chemicals, gloves should comply with European Standard EN374.

#### Other skin and body protection

Wear appropriate clothing to prevent any possibility of skin contact.

#### Hygiene measures

Wash at the end of each work shift and before eating, smoking and using the toilet. Wash hands and any other contaminated areas of the body with soap and water before leaving the work site.

#### Respiratory protection

Respiratory protection complying with an approved standard should be worn if a risk assessment indicates inhalation of contaminants is possible. If ventilation is inadequate, suitable respiratory protection must be worn. EN 136/140/141/145/143/149

## SECTION 9: Physical and chemical properties

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

|                 |                           |
|-----------------|---------------------------|
| Appearance      | Liquid.                   |
| Colour          | Green-yellow.             |
| Odour           | Characteristic.           |
| Odour threshold | No information available. |

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|                                                     |                                                                               |
|-----------------------------------------------------|-------------------------------------------------------------------------------|
| <b>pH</b>                                           | No information available.                                                     |
| <b>Melting point</b>                                | No information available.                                                     |
| <b>Pour Point</b>                                   | No information available.                                                     |
| <b>Freezing Point</b>                               | No information available.                                                     |
| <b>Initial boiling point and range</b>              | > 35°C                                                                        |
| <b>Flash point</b>                                  | 50°C                                                                          |
| <b>Evaporation rate</b>                             | No information available.                                                     |
| <b>Evaporation factor</b>                           | No information available.                                                     |
| <b>Flammability (solid, gas)</b>                    | No information available.                                                     |
| <b>Upper/lower flammability or explosive limits</b> | Lower flammable/explosive limit: 0.7 % Upper flammable/explosive limit: 6.1 % |
| <b>Other flammability</b>                           | No information available.                                                     |
| <b>Vapour pressure</b>                              | 2.3 hPa @ 20°C                                                                |
| <b>Vapour density</b>                               | No information available.                                                     |
| <b>Relative density</b>                             | 0.862 @ 20°C                                                                  |
| <b>Bulk density</b>                                 | No information available.                                                     |
| <b>Solubility(ies)</b>                              | Insoluble in water.                                                           |
| <b>Partition coefficient</b>                        | No information available.                                                     |
| <b>Auto-ignition temperature</b>                    | 255°C                                                                         |
| <b>Decomposition Temperature</b>                    | No information available.                                                     |
| <b>Viscosity</b>                                    | < 18 mm <sup>2</sup> /s @ 40°C                                                |
| <b>Explosive properties</b>                         | Not considered to be explosive.                                               |
| <b>Explosive under the influence of a flame</b>     | No information available.                                                     |
| <b>Oxidising properties</b>                         | Does not meet the criteria for classification as oxidising.                   |

### 9.2. Other information

|                                  |                           |
|----------------------------------|---------------------------|
| <b>Refractive index</b>          | No information available. |
| <b>Particle size</b>             | No information available. |
| <b>Molecular weight</b>          | No information available. |
| <b>Volatility</b>                | No information available. |
| <b>Saturation concentration</b>  | No information available. |
| <b>Critical temperature</b>      | No information available. |
| <b>Volatile organic compound</b> | No information available. |

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

|                   |                                                                                                |
|-------------------|------------------------------------------------------------------------------------------------|
| <b>Reactivity</b> | No test data specifically related to reactivity available for this product or its ingredients. |
|-------------------|------------------------------------------------------------------------------------------------|

## LIME OIL EXPRESSED AURANTIFOLIA

### 10.2. Chemical stability

**Stability** Stable at normal ambient temperatures and when used as recommended.

### 10.3. Possibility of hazardous reactions

**Possibility of hazardous reactions** Under normal conditions of storage and use, no hazardous reactions will occur.

### 10.4. Conditions to avoid

**Conditions to avoid** Avoid exposure to high temperatures or direct sunlight.

### 10.5. Incompatible materials

**Materials to avoid** Oxidising agents.

### 10.6. Hazardous decomposition products

**Hazardous decomposition products** Does not decompose when used and stored as recommended. Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity - oral

**ATE oral (mg/kg)** 45,454.55

#### Skin corrosion/irritation

**Skin corrosion/irritation** Causes skin irritation.

#### Serious eye damage/irritation

**Serious eye damage/irritation** No information available.

#### Respiratory sensitisation

**Respiratory sensitisation** No information available.

#### Skin sensitisation

**Skin sensitisation** May cause an allergic skin reaction.

#### Germ cell mutagenicity

**Genotoxicity - in vitro** No information available.

#### Carcinogenicity

**Carcinogenicity** No information available.

#### Reproductive toxicity

**Reproductive toxicity - fertility** No information available.

**Reproductive toxicity - development**

No information available.

#### Specific target organ toxicity - single exposure

**STOT - single exposure** No information available.

#### Specific target organ toxicity - repeated exposure

**STOT - repeated exposure** No information available.

#### Aspiration hazard

**Aspiration hazard** May be fatal if swallowed and enters airways.

#### **Inhalation**

Gas or vapour in high concentrations may irritate the respiratory system.



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|                     |                                                                                                                                                  |
|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Ingestion</b>    | May be fatal if swallowed and enters airways. Ingestion may cause severe irritation of the mouth, the oesophagus and the gastrointestinal tract. |
| <b>Skin contact</b> | Causes skin irritation. May cause an allergic skin reaction.                                                                                     |
| <b>Eye contact</b>  | May cause temporary eye irritation.                                                                                                              |

### Toxicological information on ingredients.

#### (R)-P-MENTHA-1,8-DIENE

##### Acute toxicity - oral

Notes (oral LD<sub>50</sub>)                      LD<sub>50</sub> 4400 mg/kg, Oral, Rat

##### Acute toxicity - dermal

Notes (dermal LD<sub>50</sub>)                      LD<sub>50</sub> 5000 mg/kg, Dermal, Rabbit

##### Skin corrosion/irritation

Animal data                              No information available.

##### Serious eye damage/irritation

Serious eye damage/irritation                      No information available.

##### Respiratory sensitisation

Respiratory sensitisation                      No information available.

##### Skin sensitisation

Skin sensitisation                              No information available.

##### Germ cell mutagenicity

Genotoxicity - in vitro                      No information available.

##### Carcinogenicity

IARC carcinogenicity                      IARC Group 3    Not classifiable as to its carcinogenicity to humans.

##### Reproductive toxicity

Reproductive toxicity - fertility                      No information available.

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

STOT - single exposure                      No information available.

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

STOT - repeated exposure                      No information available.

##### Aspiration hazard

Aspiration hazard                              May be fatal if swallowed and enters airways. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

**Inhalation**                              May cause respiratory system irritation.

**Ingestion**                              Harmful: possible risk of irreversible effects if swallowed.

**Skin contact**                              Irritating to skin. May cause sensitisation by skin contact.

**Eye contact**                              May cause temporary eye irritation.

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### P-MENTHA-1,4-DIENE

#### Acute toxicity - oral

|                                              |                                        |
|----------------------------------------------|----------------------------------------|
| Acute toxicity oral (LD <sub>50</sub> mg/kg) | 3,650.0                                |
| Species                                      | Rat                                    |
| Notes (oral LD <sub>50</sub> )               | LD <sub>50</sub> 3650 mg/kg, Oral, Rat |
| ATE oral (mg/kg)                             | 3,650.0                                |

#### Acute toxicity - dermal

|                                                |                                             |
|------------------------------------------------|---------------------------------------------|
| Acute toxicity dermal (LD <sub>50</sub> mg/kg) | 5,000.0                                     |
| Species                                        | Rabbit                                      |
| Notes (dermal LD <sub>50</sub> )               | LD <sub>50</sub> 5000 mg/kg, Dermal, Rabbit |
| ATE dermal (mg/kg)                             | 5,000.0                                     |

### PIN-2-(10) ENE

#### Acute toxicity - oral

|                                              |                                        |
|----------------------------------------------|----------------------------------------|
| Acute toxicity oral (LD <sub>50</sub> mg/kg) | 5,000.0                                |
| Species                                      | Rat                                    |
| Notes (oral LD <sub>50</sub> )               | LD <sub>50</sub> 5000 mg/kg, Oral, Rat |
| ATE oral (mg/kg)                             | 5,000.0                                |

#### Acute toxicity - dermal

|                                                |                                             |
|------------------------------------------------|---------------------------------------------|
| Acute toxicity dermal (LD <sub>50</sub> mg/kg) | 5,000.0                                     |
| Species                                        | Rabbit                                      |
| Notes (dermal LD <sub>50</sub> )               | LD <sub>50</sub> 5000 mg/kg, Dermal, Rabbit |
| ATE dermal (mg/kg)                             | 5,000.0                                     |

#### Aspiration hazard

|                   |                                                                                                                                    |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Aspiration hazard | May be fatal if swallowed and enters airways. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis. |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------|

|              |                                                     |
|--------------|-----------------------------------------------------|
| Inhalation   | Irritating to respiratory system.                   |
| Ingestion    | Gastrointestinal symptoms, including upset stomach. |
| Skin contact | Irritating to skin.                                 |
| Eye contact  | Irritating to eyes.                                 |

### CITRAL

#### Acute toxicity - oral

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Acute toxicity oral (LD<sub>50</sub> mg/kg) 6,800.0

Species Rat

Notes (oral LD<sub>50</sub>) LD<sub>50</sub> 6800 mg/kg, Oral, Rat

ATE oral (mg/kg) 6,800.0

### Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> mg/kg) 2,250.0

Species Rabbit

Notes (dermal LD<sub>50</sub>) LD<sub>50</sub> 2250 mg/kg, Dermal, Rabbit

ATE dermal (mg/kg) 2,250.0

### Skin corrosion/irritation

Animal data Irritating. Rabbit

### Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative.

## MYRCENE

### Acute toxicity - oral

Notes (oral LD<sub>50</sub>) LD<sub>50</sub> > 5000 mg/kg, Oral, Rat

### Acute toxicity - dermal

Notes (dermal LD<sub>50</sub>) LD<sub>50</sub> > 5000 mg/kg, Dermal, Rabbit

## 2-PINENE

### Acute toxicity - oral

Acute toxicity oral (LD<sub>50</sub> mg/kg) 500.0

Species Rat

Notes (oral LD<sub>50</sub>) LD<sub>50</sub> 3700 mg/kg, Oral, Rat

ATE oral (mg/kg) 500.0

### Acute toxicity - dermal

Acute toxicity dermal (LD<sub>50</sub> mg/kg) 5,000.0

Species Rat

Notes (dermal LD<sub>50</sub>) LD<sub>50</sub> 5000 mg/kg, Dermal, Rat

ATE dermal (mg/kg) 5,000.0

Inhalation May cause respiratory system irritation.

Ingestion Harmful: may cause lung damage if swallowed.

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|                     |                                          |
|---------------------|------------------------------------------|
| <b>Skin contact</b> | May cause sensitisation by skin contact. |
| <b>Eye contact</b>  | Irritating to eyes.                      |

### SECTION 12: Ecological information

**Ecotoxicity** Toxic to aquatic life with long lasting effects.

#### Ecological information on ingredients.

##### **(R)-P-MENTHA-1,8-DIENE**

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

##### **PIN-2-(10) ENE**

**Ecotoxicity** Very toxic to aquatic life with long lasting effects.

##### **2-PINENE**

**Ecotoxicity** The product contains a substance which is toxic to aquatic organisms and which may cause long-term adverse effects in the aquatic environment.

#### **12.1. Toxicity**

**Toxicity** Toxic to aquatic life.

#### Ecological information on ingredients.

##### **(R)-P-MENTHA-1,8-DIENE**

##### **Acute aquatic toxicity**

**LE(C)<sub>50</sub>** 0.1 < L(E)C<sub>50</sub> ≤ 1

**M factor (Acute)** 1

**Acute toxicity - fish** LC<sub>50</sub>, 96 hours: 0.8 mg/l, Pimephales promelas (Fat-head Minnow)

**Acute toxicity - aquatic invertebrates** EC<sub>50</sub>, 48 hours: 69.6 mg/l, Daphnia magna

##### **Chronic aquatic toxicity**

**M factor (Chronic)** 1

##### **PIN-2-(10) ENE**

##### **Acute aquatic toxicity**

**LE(C)<sub>50</sub>** 0.1 < L(E)C<sub>50</sub> ≤ 1

**M factor (Acute)** 1

**Acute toxicity - aquatic invertebrates** LC<sub>50</sub>, 48 hour: 2.2 mg/l, Daphnia magna

##### **Chronic aquatic toxicity**

**M factor (Chronic)** 1

##### **CITRAL**

##### **Acute aquatic toxicity**

## LIME OIL EXPRESSED AURANTIFOLIA

|                                        |                                                      |
|----------------------------------------|------------------------------------------------------|
| Acute toxicity - fish                  | LC <sub>50</sub> , 96 hours: 4.6 mg/l, Fish          |
| Acute toxicity - aquatic invertebrates | EC <sub>50</sub> , 48 hours: 6.8 mg/l, Daphnia magna |
| Acute toxicity - aquatic plants        | IC <sub>50</sub> , 72 hours: 103.8 mg/l, Algae       |

### 2-PINENE

#### Acute aquatic toxicity

|                                        |                                                      |
|----------------------------------------|------------------------------------------------------|
| LE(C) <sub>50</sub>                    | 0.1 < L(E)C <sub>50</sub> ≤ 1                        |
| M factor (Acute)                       | 1                                                    |
| Acute toxicity - aquatic invertebrates | LC <sub>50</sub> , 48 hour: 6.74 mg/l, Daphnia magna |

#### Chronic aquatic toxicity

|                    |                        |
|--------------------|------------------------|
| NOEC               | 0.01 < NOEC ≤ 0.1      |
| Degradability      | Non-rapidly degradable |
| M factor (Chronic) | 1                      |

### 12.2. Persistence and degradability

**Persistence and degradability** There are no data on the degradability of this product.

### Ecological information on ingredients.

#### (R)-P-MENTHA-1,8-DIENE

|                               |                            |
|-------------------------------|----------------------------|
| Persistence and degradability | Not readily biodegradable. |
|-------------------------------|----------------------------|

#### PIN-2-(10) ENE

|                               |                                       |
|-------------------------------|---------------------------------------|
| Persistence and degradability | The product is readily biodegradable. |
|-------------------------------|---------------------------------------|

#### CITRAL

|                               |                                              |
|-------------------------------|----------------------------------------------|
| Persistence and degradability | The substance is readily biodegradable.      |
| Biodegradation                | - Degradation 85 - 95%: 28 days<br>OECD 301C |

#### 2-PINENE

|                               |                                       |
|-------------------------------|---------------------------------------|
| Persistence and degradability | The product is readily biodegradable. |
|-------------------------------|---------------------------------------|

### 12.3. Bioaccumulative potential

|                           |                                       |
|---------------------------|---------------------------------------|
| Bioaccumulative potential | No data available on bioaccumulation. |
| Partition coefficient     | No information available.             |

### Ecological information on ingredients.

## LIME OIL EXPRESSED AURANTIFOLIA

### (R)-P-MENTHA-1,8-DIENE

**Bioaccumulative potential** Potentially bioaccumulating.

**Partition coefficient** log Pow: 4.38

### CITRAL

**Bioaccumulative potential** Bioaccumulation is unlikely. BCF: 89.72,

**Partition coefficient** log Pow: 2.76

### 12.4. Mobility in soil

**Mobility** Insoluble in water.

### Ecological information on ingredients.

### (R)-P-MENTHA-1,8-DIENE

**Mobility** The product is insoluble in water.

### PIN-2-(10) ENE

**Mobility** The product is insoluble in water.

### 2-PINENE

**Mobility** The product is insoluble in water.

### 12.5. Results of PBT and vPvB assessment

**Results of PBT and vPvB assessment** This substance is not classified as PBT or vPvB according to current EU criteria.

### Ecological information on ingredients.

### (R)-P-MENTHA-1,8-DIENE

**Results of PBT and vPvB assessment** This substance is not classified as PBT or vPvB according to current EU criteria.

### 12.6. Other adverse effects

**Other adverse effects** None known.

### Ecological information on ingredients.

### (R)-P-MENTHA-1,8-DIENE

**Other adverse effects** Not determined.

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

**General information** Do not puncture or incinerate, even when empty. Empty containers or liners may retain some product residues and hence be potentially hazardous.

**Disposal methods** Dispose of waste to licensed waste disposal site in accordance with the requirements of the local Waste Disposal Authority.

## SECTION 14: Transport information

## LIME OIL EXPRESSED AURANTIFOLIA

### General

Wear protective clothing as described in Section 8 of this safety data sheet.

#### 14.1. UN number

|                  |      |
|------------------|------|
| UN No. (ADR/RID) | 1993 |
| UN No. (IMDG)    | 1993 |
| UN No. (ICAO)    | 1993 |
| UN No. (ADN)     | 1993 |

#### 14.2. UN proper shipping name

|                                |                                                                                      |
|--------------------------------|--------------------------------------------------------------------------------------|
| Proper shipping name (ADR/RID) | FLAMMABLE LIQUID, N.O.S. (CONTAINS (R)-P-MENTHA-1,8-DIENE, PIN-2-(10) ENE)           |
| Proper shipping name (IMDG)    | FLAMMABLE LIQUID, N.O.S. (CONTAINS (R)-P-MENTHA-1,8-DIENE, PIN-2-(10) ENE, 2-PINENE) |
| Proper shipping name (ICAO)    | FLAMMABLE LIQUID, N.O.S. (CONTAINS (R)-P-MENTHA-1,8-DIENE, PIN-2-(10) ENE)           |
| Proper shipping name (ADN)     | FLAMMABLE LIQUID, N.O.S. (CONTAINS (R)-P-MENTHA-1,8-DIENE, PIN-2-(10) ENE)           |

#### 14.3. Transport hazard class(es)

|                             |    |
|-----------------------------|----|
| ADR/RID class               | 3  |
| ADR/RID classification code | F1 |
| ADR/RID label               | 3  |
| IMDG class                  | 3  |
| ICAO class/division         | 3  |
| ADN class                   | 3  |

#### Transport labels



#### 14.4. Packing group

|                       |     |
|-----------------------|-----|
| ADR/RID packing group | III |
| IMDG packing group    | III |
| ICAO packing group    | III |
| ADN packing group     | III |

#### 14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



#### 14.6. Special precautions for user

|                        |          |
|------------------------|----------|
| EmS                    | F-E, S-E |
| ADR transport category | 3        |
| Emergency Action Code  | •3Y      |

## LIME OIL EXPRESSED AURANTIFOLIA

Hazard Identification Number 30  
(ADR/RID)

Tunnel restriction code (D/E)

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

Transport in bulk according to Not applicable.

Annex II of MARPOL 73/78  
and the IBC Code

## SECTION 15: Regulatory information

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

**EU legislation** Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (as amended).  
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures (as amended).  
Commission Regulation (EU) No 2015/830 of 28 May 2015.  
This product may impact SEVESO storage regulations.

**Restrictions (Annex XVII Regulation 1907/2006)** This product is/contains a substance that is included in REGULATION (EC) No 1907/2006 (REACH) ANNEX XVII - RESTRICTIONS ON THE MANUFACTURE, PLACING ON THE MARKET AND USE OF CERTAIN DANGEROUS SUBSTANCES, MIXTURES AND ARTICLES. Entry number: 3

**Seveso Directive - Control of major accident hazards** P5c E2

### 15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

## SECTION 16: Other information



## LIME OIL EXPRESSED AURANTIFOLIA

### Abbreviations and acronyms used in the safety data sheet

ATE: Acute Toxicity Estimate.  
 ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road.  
 ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.  
 CAS: Chemical Abstracts Service.  
 DNEL: Derived No Effect Level.  
 IATA: International Air Transport Association.  
 IMDG: International Maritime Dangerous Goods.  
 Kow: Octanol-water partition coefficient.  
 LC<sub>50</sub>: Lethal Concentration to 50 % of a test population.  
 LD<sub>50</sub>: Lethal Dose to 50% of a test population (Median Lethal Dose).  
 PBT: Persistent, Bioaccumulative and Toxic substance.  
 PNEC: Predicted No Effect Concentration.  
 REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006.  
 RID: European Agreement concerning the International Carriage of Dangerous Goods by Rail.  
 vPvB: Very Persistent and Very Bioaccumulative.  
 IARC: International Agency for Research on Cancer.  
 MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978.  
 cATpE: Converted Acute Toxicity Point Estimate.  
 BCF: Bioconcentration Factor.  
 BOD: Biochemical Oxygen Demand.  
 EC<sub>50</sub>: 50% of maximal Effective Concentration.  
 LOAEC: Lowest Observed Adverse Effect Concentration.  
 LOAEL: Lowest Observed Adverse Effect Level.  
 NOAEC: No Observed Adverse Effect Concentration.  
 NOAEL: No Observed Adverse Effect Level.  
 NOEC: No Observed Effect Concentration.  
 LOEC: Lowest Observed Effect Concentration.  
 DMEL: Derived Minimal Effect Level.  
 EL50: Exposure Limit 50  
 hPa: Hectopascal  
 LL50: Lethal Loading fifty  
 OECD: Organisation for Economic Co-operation and Development  
 POW: Octanol-water partition coefficient  
 SCBA: self-contained breathing apparatus  
 STP: Sewage Treatment Plant  
 VOC: Volatile Organic Compounds

### Classification abbreviations and acronyms

Acute Tox. = Acute toxicity  
 Aquatic Acute = Hazardous to the aquatic environment (acute)  
 Aquatic Chronic = Hazardous to the aquatic environment (chronic)

### Key literature references and sources for data

Supplier's information.

### Revision comments

NOTE: Lines within the margin indicate significant changes from the previous revision.

### Revision date

18/01/2021

### Version number

1.000

### SDS number

61688

### SDS status

Approved.

## LIME OIL EXPRESSED AURANTIFOLIA

**Hazard statements in full**

H226 Flammable liquid and vapour.  
H302 Harmful if swallowed.  
H304 May be fatal if swallowed and enters airways.  
H315 Causes skin irritation.  
H317 May cause an allergic skin reaction.  
H319 Causes serious eye irritation.  
H361 Suspected of damaging fertility or the unborn child.  
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.

**Signature**

Jitendra Panchal

This information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is, to the best of the company's knowledge and belief, accurate and reliable as of the date indicated. However, no warranty, guarantee or representation is made to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability of such information for his own particular use.