

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878  
Issue date: 12/9/2019 Revision date: 11/25/2022 Supersedes version of: 10/17/2022 Version: 4.0

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

#### 1.1. Product identifier

Product form : Substance  
Substance name : Cardamom Essential Oil, Organic, All Origins  
EC-No. : 288-922-1  
CAS-No. : 85940-32-5  
Product code : 10085TOC  
Type of product : Essential oil  
Product group : Raw material

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

##### 1.2.1. Relevant identified uses

Main use category : Industrial use, Professional use  
Use of the substance/mixture : Food/feedstuff additives

##### 1.2.2. Uses advised against

No additional information available

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

SIRIUS SAS  
57 Chemin de la Métairie Haute  
81580 CAMBUNET SUR LE SOR  
France  
T + 33 (0)5-32-09-11-72  
[contact@sirius-bio.com](mailto:contact@sirius-bio.com)

#### 1.4. Emergency telephone number

No additional information available

### SECTION 2: Hazards identification

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

##### Classification according to Regulation (EC) No. 1272/2008 [CLP]

|   |      |
|---|------|
| Flammable liquids, Category 3                                     | H226 |
| Skin corrosion/irritation, Category 2                             | H315 |
| Serious eye damage/eye irritation, Category 2                     | H319 |
| Skin sensitisation, Category 1                                    | H317 |
| Hazardous to the aquatic environment – Acute Hazard, Category 1   | H400 |
| Hazardous to the aquatic environment – Chronic Hazard, Category 1 | H410 |

Full text of H- and EUH-statements: see section 16

##### Adverse physicochemical, human health and environmental effects

Flammable liquid and vapour. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Very toxic to aquatic life with long lasting effects.

#### 2.2. Label elements

##### Labelling according to Regulation (EC) No. 1272/2008 [CLP]

Hazard pictograms (CLP) :



GHS02

GHS07

GHS09

Signal word (CLP) :

Warning

Hazard statements (CLP) :

H226 - Flammable liquid and vapour.  
H315 - Causes skin irritation.  
H317 - May cause an allergic skin reaction.  
H319 - Causes serious eye irritation.  
H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements (CLP) :

P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.  
P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P280 - Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

# Cardamom Essential Oil, Organic, All Origins

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

P321 - Specific treatment (see supplemental first aid instruction on this label).  
P391 - Collect spillage.

### 2.3. Other hazards

Contains no PBT/vPvB substances  $\geq 0.1\%$  assessed in accordance with REACH Annex XIII

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Name : Cardamom Essential Oil, Organic, All Origins  
CAS-No. : 85940-32-5  
EC-No. : 288-922-1

| Name             | Product identifier   | %       | Classification according to Regulation (EC) No. 1272/2008 [CLP]   |
|------------------|--|---------|---|
| Terpenyl acetate | CAS-No.: 80-26-2<br>EC-No.: 201-265-7  | 25 – 50 | Aquatic Chronic 2, H411   |
| 1,8 Cineole      | CAS-No.: 470-82-6<br>EC-No.: 207-431-5   | 20 – 50 | Flam. Liq. 3, H226<br>Skin Sens. 1B, H317<br>Eye Irrit. 2, H319   |
| Linalyl acetate  | CAS-No.: 115-95-7<br>EC-No.: 204-116-4   | 1 – 10  | Eye Irrit. 2, H319<br>Skin Irrit. 2, H315<br>Skin Sens. 1B, H317  |
| Alpha terpineol  | CAS-No.: 98-55-5<br>EC-No.: 202-680-6  | < 10    | Skin Irrit. 2, H315<br>Eye Irrit. 2, H319   |
| Limonene         | CAS-No.: 138-86-3<br>EC-No.: 227-813-5<br>EC Index-No.: 601-096-00-2<br>REACH-no: 01-2119529223-47 | 1 – 10  | 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 |
| Linalool *       | CAS-No.: 78-70-6<br>EC-No.: 201-134-4<br>EC Index-No.: 603-235-00-2<br>REACH-no: 01-2119474016-42  | 1 – 10  | Skin Sens. 1B, H317   |
| Sabinene         | CAS-No.: 3387-41-5<br>EC-No.: 222-212-4  | 1 – 10  | Acute Tox. 4 (Oral), H302   |
| Terpinen-4-ol    | CAS-No.: 562-74-3<br>EC-No.: 209-235-5   | 0.1 – 5 | Acute Tox. 4 (Oral), H302<br>Skin Irrit. 2, H315<br>Eye Irrit. 2, H319  |
| Myrcene          | CAS-No.: 123-35-3<br>EC-No.: 204-622-5   | < 5     | Asp. Tox. 1, H304<br>Eye Irrit. 2, H319<br>Aquatic Acute 1, H400<br>Aquatic Chronic 2, H411<br>Flam. Liq. 3, H226<br>Skin Irrit. 2, H315  |
| Alpha pinene     | CAS-No.: 80-56-8<br>EC-No.: 201-291-9<br>REACH-no: 01-2119519223-49                                | 1 – 5   | Flam. Liq. 3, H226<br>Skin Irrit. 2, H315<br>Skin Sens. 1, H317<br>Asp. Tox. 1, H304  |
| Trans nerolidol  | CAS-No.: 40716-66-3<br>EC-No.: 255-053-4   | 0.1 – 5 | Eye Irrit. 2, H319<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410<br>Skin Sens. 1B, H317   |
| Geraniol *       | CAS-No.: 106-24-1<br>EC-No.: 203-377-1<br>EC Index-No.: 603-241-00-5<br>REACH-no: 01-2119552430-49 | < 5     | Skin Sens. 1, H317<br>Aquatic Chronic 3, H412   |

# Cardamom Essential Oil, Organic, All Origins

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

| Name                        | Product identifier  | %       | Classification according to Regulation (EC) No. 1272/2008 [CLP]   |
|-----------------------------|---|---------|---|
| Citral (neral + geranial) * | CAS-No.: 5392-40-5<br>EC-No.: 226-394-6<br>EC Index-No.: 605-019-00-3<br>REACH-no: 01-2119462829-23 | < 1     | Eye Irrit. 2, H319<br>Skin Irrit. 2, H315<br>Skin Sens. 1, H317   |
| Paracymene                  | CAS-No.: 99-87-6<br>EC-No.: 202-796-7<br>EC Index-No.: 601-094-00-1                                 | 0.1 – 1 | Repr. 2, H361<br>Flam. Liq. 3, H226<br>Asp. Tox. 1, H304<br>Aquatic Chronic 2, H411<br>Acute Tox. 3 (Inhalation), H331                    |
| Geranyl acetate             | CAS-No.: 105-87-3<br>EC-No.: 203-341-5  | < 1     | Skin Sens. 1B, H317<br>Skin Irrit. 2, H315<br>Aquatic Chronic 3, H412   |
| Gamma terpinene             | CAS-No.: 99-85-4<br>EC-No.: 202-794-6   | 0.1 – 1 | Repr. 2, H361<br>Flam. Liq. 3, H226<br>Asp. Tox. 1, H304<br>Aquatic Chronic 2, H411   |
| Terpinolene                 | CAS-No.: 586-62-9<br>EC-No.: 209-578-0  | < 1     | Asp. Tox. 1, H304<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410<br>Skin Sens. 1B, H317  |
| Beta Pinene                 | CAS-No.: 127-91-3<br>EC-No.: 204-872-5  | 0.1 – 1 | Asp. Tox. 1, H304<br>Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410<br>Flam. Liq. 3, H226<br>Skin Irrit. 2, H315<br>Skin Sens. 1B, H317 |
| Alpha terpinene             | CAS-No.: 99-86-5<br>EC-No.: 202-795-1   | < 1     | Flam. Liq. 3, H226<br>Acute Tox. 4 (Oral), H302<br>Skin Sens. 1, H317<br>Asp. Tox. 1, H304<br>Aquatic Chronic 2, H411                     |
| Neryl acetate               | CAS-No.: 141-12-8<br>EC-No.: 205-459-2  | < 1     | Skin Sens. 1B, H317   |
| Octanal                     | CAS-No.: 124-13-0<br>EC-No.: 204-683-8  | 0.1 – 1 | Eye Irrit. 2, H319<br>Aquatic Chronic 2, H411<br>Flam. Liq. 3, H226<br>Skin Irrit. 2, H315  |
| Camphene                    | CAS-No.: 79-92-5<br>EC-No.: 201-234-8   | 0.1 – 1 | Aquatic Acute 1, H400<br>Aquatic Chronic 1, H410  |
| Methyl heptenone            | CAS-No.: 409-02-9<br>EC-No.: 206-990-2  | < 0.1   | Acute Tox. 4 (Oral), H302<br>Eye Irrit. 2, H319<br>Flam. Liq. 3, H226<br>Skin Irrit. 2, H315<br>Skin Sens. 1A, H317                       |

Full text of H- and EUH-statements: see section 16

### 3.2. Mixtures

Not established.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

|                                       |  |
|---------------------------------------|--|
| First-aid measures after inhalation   | : Remove person to fresh air and keep comfortable for breathing.   |
| First-aid measures after skin contact | : Rinse skin with water/shower. Take off immediately all contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.                                 |
| First-aid measures after eye contact  | : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. |
| First-aid measures after ingestion    | : Call a poison center or a doctor if you feel unwell.   |

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

|                                     |  |
|-------------------------------------|--|
| Symptoms/effects after skin contact | : Irritation. May cause an allergic skin reaction. |
| Symptoms/effects after eye contact  | : Eye irritation.                                  |

# Cardamom Essential Oil, Organic, All Origins

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

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

Treat symptomatically.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

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

Fire hazard : Flammable liquid and vapour.

Hazardous decomposition products in case of fire : Toxic fumes may be released.

### 5.3. Advice for firefighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment.

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

For containment : Collect spillage.

Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.

Other information : Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Ground/bond container and receiving equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Flammable vapours may accumulate in the container. Use explosion-proof equipment. Wear personal protective equipment. Avoid contact with skin and eyes. Avoid breathing dust/fume/gas/mist/vapours/spray.

Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

Technical measures : Ground/bond container and receiving equipment.

Storage conditions : Store in a well-ventilated place. Keep cool. Keep container tightly closed.

### 7.3. Specific end use(s)

No additional information available

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### 8.1.1. National occupational exposure and biological limit values

No additional information available

#### 8.1.2. Recommended monitoring procedures

No additional information available

#### 8.1.3. Air contaminants formed

No additional information available

#### 8.1.4. DNEL and PNEC

No additional information available

#### 8.1.5. Control banding

No additional information available

# Cardamom Essential Oil, Organic, All Origins

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### 8.2. Exposure controls

#### 8.2.1. Appropriate engineering controls

##### Appropriate engineering controls:

Ensure good ventilation of the work station.

#### 8.2.2. Personal protection equipment

##### Personal protective equipment symbol(s):



##### 8.2.2.1. Eye and face protection

###### Eye protection:

Safety glasses

##### 8.2.2.2. Skin protection

###### Skin and body protection:

Wear suitable protective clothing

###### Hand protection:

Protective gloves

##### 8.2.2.3. Respiratory protection

###### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

##### 8.2.2.4. Thermal hazards

No additional information available

#### 8.2.3. Environmental exposure controls

##### Environmental exposure controls:

Avoid release to the environment.

## SECTION 9: Physical and chemical properties

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

|   |   |
|---|---|
| Physical state                                  | : Liquid  |
| Colour  | : Colourless to pale yellow liquid.                   |
| Odour   | : characteristic. spicy. cineol like.                 |
| Odour threshold                                 | : Not available                                       |
| Melting point                                   | : Not available                                       |
| Freezing point                                  | : Not available                                       |
| Boiling point                                   | : 200.85 °C Atm. press.: 98,8 kPa Decomposition: 'no' |
| Flammability                                    | : Flammable liquid and vapour.                        |
| Explosive limits                                | : Not available                                       |
| Lower explosion limit                           | : Not available                                       |
| Upper explosion limit                           | : Not available                                       |
| Flash point                                     | : 59 °C at 20 °C                                      |
| Auto-ignition temperature                       | : Not available                                       |
| Decomposition temperature                       | : Not available                                       |
| pH  | : Not available                                       |
| Viscosity, kinematic                            | : Not available                                       |
| Solubility                                      | : Not available                                       |
| Partition coefficient n-octanol/water (Log Kow) | : Not available                                       |
| Vapour pressure                                 | : Not available                                       |
| Vapour pressure at 50 °C                        | : Not available                                       |
| Density   | : Not available                                       |
| Relative density                                | : 0.92 – 0.94   |
| Relative vapour density at 20 °C                | : Not available                                       |

# Cardamom Essential Oil, Organic, All Origins

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

Particle characteristics : Not applicable

### 9.2. Other information

#### 9.2.1. Information with regard to physical hazard classes

No additional information available

#### 9.2.2. Other safety characteristics

Refractive index : 1.46 – 1.467 at 20 °C

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Flammable liquid and vapour.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

### 10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

### 10.5. Incompatible materials

No additional information available

### 10.6. Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## SECTION 11: Toxicological information

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

Acute toxicity (oral) : Not classified

Acute toxicity (dermal) : Not classified

Acute toxicity (inhalation) : Not classified

#### Cardamom Essential Oil, Organic, All Origins (85940-32-5)

|               |                                     |
|---------------|-------------------------------------|
| LD50 oral rat | ≈ 5000 mg/kg bodyweight Animal: rat |
|---------------|-------------------------------------|

#### Alpha pinene (80-56-8)

|           |                       |
|-----------|-----------------------|
| LD50 oral | 3700 mg/kg bodyweight |
|-----------|-----------------------|

|             |                         |
|-------------|-------------------------|
| LD50 dermal | > 5000 mg/kg bodyweight |
|-------------|-------------------------|

#### Alpha terpinene (99-86-5)

|           |                       |
|-----------|-----------------------|
| LD50 oral | 1680 mg/kg bodyweight |
|-----------|-----------------------|

#### Alpha terpineol (98-55-5)

|               |   |
|---------------|---|
| LD50 oral rat | 4300 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 2900 - 5700 |
|---------------|---|

|           |                       |
|-----------|-----------------------|
| LD50 oral | 4300 mg/kg bodyweight |
|-----------|-----------------------|

|                 |  |
|-----------------|--|
| LD50 dermal rat | > 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity) |
|-----------------|--|

|                    |                       |
|--------------------|-----------------------|
| LD50 dermal rabbit | > 3000 mg/kg OECD 402 |
|--------------------|-----------------------|

#### Beta Pinene (127-91-3)

|               |                           |
|---------------|---------------------------|
| LD50 oral rat | 300 – 2000 mg/kg OCDE 423 |
|---------------|---------------------------|

|                 |              |
|-----------------|--------------|
| LD50 dermal rat | > 2000 mg/kg |
|-----------------|--------------|

#### Camphene (79-92-5)

|               |   |
|---------------|---|
| LD50 oral rat | > 2000 mg/kg bodyweight Animal: other:rat and mouse |
|---------------|---|

|           |                                       |
|-----------|---------------------------------------|
| LD50 oral | > 5000 mg/kg bodyweight Animal: mouse |
|-----------|---------------------------------------|

|                 |                                 |
|-----------------|---------------------------------|
| LD50 dermal rat | > 2500 mg/kg bodyweight Animal: |
|-----------------|---------------------------------|

|                    |  |
|--------------------|--|
| LD50 dermal rabbit | > 2000 mg/kg bodyweight Animal: rabbit |
|--------------------|--|

|                       |                       |
|-----------------------|-----------------------|
| LC50 Inhalation - Rat | > 25 mg/l air Animal: |
|-----------------------|-----------------------|

#### Citral (neral + geranial) \* (5392-40-5)

|               |                                     |
|---------------|-------------------------------------|
| LD50 oral rat | ≈ 6800 mg/kg bodyweight Animal: rat |
|---------------|-------------------------------------|

# Cardamom Essential Oil, Organic, All Origins

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

| <b>Citral (neral + geranial) * (5392-40-5)</b> |  |
|--|--|
| LD50 oral                                      | 4960 mg/kg bodyweight  |
| LD50 dermal rat                                | > 2000 mg/kg bodyweight Animal: rat  |
| LD50 dermal                                    | 2250 mg/kg bodyweight  |
| <b>Gamma terpinene (99-85-4)</b>               |  |
| LD50 oral                                      | 3650 mg/kg bodyweight  |
| <b>Limonene (138-86-3)</b>                     |  |
| LD50 oral                                      | 4400 mg/kg bodyweight  |
| LD50 dermal                                    | > 2000 mg/kg bodyweight  |
| <b>Linalool * (78-70-6)</b>                    |  |
| LD50 oral rat                                  | 2790 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 2440 - 3180                                    |
| LD50 oral                                      | 2790 mg/kg bodyweight  |
| LD50 dermal rabbit                             | 5610 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), 95% CL: 3578 - 8374                               |
| LD50 dermal                                    | 5610 mg/kg bodyweight  |
| <b>Methyl heptenone (409-02-9)</b>             |  |
| LD50 oral                                      | 1410 mg/kg bodyweight  |
| <b>Octanal (124-13-0)</b>                      |  |
| LD50 oral rat                                  | 4617 mg/kg bodyweight Animal: rat, Animal sex: male  |
| LD50 dermal rabbit                             | 5207 mg/kg bodyweight Animal: rabbit, Animal sex: male   |
| LC50 Inhalation - Rat                          | > 0.83 mg/l air Animal: rat, Animal sex: male  |
| <b>Paracymene (99-87-6)</b>                    |  |
| LD50 oral                                      | 4750 mg/kg bodyweight  |
| LC50 Inhalation - Rat (Vapours)                | 9.7 mg/l/4h  |
| <b>Terpinolene (586-62-9)</b>                  |  |
| LD50 oral                                      | 3775 mg/kg bodyweight  |
| LD50 dermal rabbit                             | > 4300 mg/kg bodyweight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)  |
| <b>1,8 Cineole (470-82-6)</b>                  |  |
| LD50 oral                                      | 2480 mg/kg bodyweight  |
| LD50 dermal rat                                | > 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: EU Method B.3 (Acute Toxicity (Dermal)) |
| <b>Geraniol * (106-24-1)</b>                   |  |
| LD50 oral rat                                  | 3600 mg/kg bodyweight Animal: rat, 95% CL: 2840 - 4570   |
| LD50 oral                                      | 2100 mg/kg bodyweight  |
| LD50 dermal rabbit                             | > 5000 mg/kg bodyweight Animal: rabbit   |
| LD50 dermal                                    | > 5000 mg/kg bodyweight  |

|                                   |  |
|-----------------------------------|--|
| Skin corrosion/irritation         | : Causes skin irritation.              |
| Serious eye damage/irritation     | : Causes serious eye irritation.       |
| Respiratory or skin sensitisation | : May cause an allergic skin reaction. |
| Germ cell mutagenicity            | : Not classified                       |
| Carcinogenicity                   | : Not classified                       |

# Cardamom Essential Oil, Organic, All Origins

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

| Citral (neral + geranial) * (5392-40-5)        |   |
|--|---|
| NOAEL (chronic, oral, animal/male, 2 years)    | 60 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies), Remarks on results: other:Effect type: toxicity (migrated information)  |
| Geraniol * (106-24-1)                          |   |
| NOAEL (chronic, oral, animal/male, 2 years)    | 60 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies), Remarks on results: other:  |
| Reproductive toxicity                          | : Not classified  |
| Alpha terpineol (98-55-5)                      |   |
| NOAEL (animal/male, F0/P)                      | ≥ 750 mg/kg OECD 422  |
| NOAEL (animal/female, F0/P)                    | ≥ 750 mg/kg OECD 422  |
| Octanal (124-13-0)                             |   |
| NOAEL (animal/female, F0/P)                    | 300 mg/kg bodyweight Animal: rat, Animal sex: female  |
| NOAEL (animal/female, F1)                      | 300 mg/kg bodyweight Animal: rat, Animal sex: female  |
| Terpinolene (586-62-9)                         |   |
| NOAEL (animal/male, F0/P)                      | 294.6 mg/kg bodyweight Animal: rat, Animal sex: male, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)   |
| NOAEL (animal/female, F0/P)                    | 161.5 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)   |
| STOT-single exposure                           | : Not classified  |
| STOT-repeated exposure                         | : Not classified  |
| Alpha terpineol (98-55-5)                      |   |
| NOAEL (oral, rat, 90 days)                     | ≥ 314 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)   |
| Citral (neral + geranial) * (5392-40-5)        |   |
| LOAEC (inhalation, rat, gas, 90 days)          | 68 ppm Animal: rat, Animal sex: female  |
| NOAEL (oral, rat, 90 days)                     | 100 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)   |
| NOAEC (inhalation, rat, gas, 90 days)          | 34 ppm Animal: rat, Animal sex: female  |
| NOAEL (subchronic, oral, animal/male, 90 days) | 60 mg/kg bodyweight Animal: mouse, Animal sex: male, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)  |
| Linalool * (78-70-6)                           |   |
| LOAEL (dermal, rat/rabbit, 90 days)            | Animal: rat, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)   |
| 1,8 Cineole (470-82-6)                         |   |
| NOAEL (oral, rat, 90 days)                     | 600 mg/kg bodyweight Animal: rat, Animal sex: female, Guideline: other:japanese Ministry of Economy Trade and Industry Guideline for 28 day repeat oral dose toxicity study., Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity in Rodents), Guideline: EPA OPPTS 870.3150 (90-Day Oral Toxicity in Nonrodents) |
| Geraniol * (106-24-1)                          |   |
| NOAEL (dermal, rat/rabbit, 90 days)            | 300 mg/kg bodyweight Animal: rat, Guideline: other:, Guideline: other:  |
| Aspiration hazard                              | : Not classified  |
| Linalool * (78-70-6)                           |   |
| Viscosity, kinematic                           | 5.192 mm²/s   |

### 11.2. Information on other hazards

No additional information available

# Cardamom Essential Oil, Organic, All Origins

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### SECTION 12: Ecological information

#### 12.1. Toxicity

Ecology - general : Very toxic to aquatic life with long lasting effects.

Hazardous to the aquatic environment, short-term (acute) : Very toxic to aquatic life.

Hazardous to the aquatic environment, long-term (chronic) : Very toxic to aquatic life with long lasting effects.

Not rapidly degradable

#### Cardamom Essential Oil, Organic, All Origins (85940-32-5)

|                      |   |
|----------------------|---|
| EC50 - Crustacea [1] | 0.307 mg/l Test organisms (species): Daphnia magna  |
| EC50 - Crustacea [2] | 0.475 mg/l Test organisms (species): Daphnia magna  |
| EC50 96h - Algae [1] | > 74 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) |

#### Alpha pinene (80-56-8)

|                                    |                     |
|------------------------------------|---------------------|
| LC50 - Fish [1]                    | 0.28 mg/l           |
| EC50 - Other aquatic organisms [1] | 1.44 mg/l waterflea |

#### Alpha terpineol (98-55-5)

|                      |   |
|----------------------|---|
| LC50 - Fish [1]      | 70 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)  |
| EC50 - Crustacea [1] | 73 mg/l Test organisms (species): Daphnia magna   |
| EC50 72h - Algae [1] | ≈ 68 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) |
| EC50 72h - Algae [2] | ≈ 17 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) |

#### Camphene (79-92-5)

|                      |   |
|----------------------|---|
| LC50 - Fish [1]      | 0.72 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)  |
| EC50 - Crustacea [1] | 0.72 mg/l Test organisms (species): Daphnia magna   |
| EC50 72h - Algae [1] | 1.75 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) |

#### Citral (neral + geranial) \* (5392-40-5)

|                                    |   |
|------------------------------------|---|
| LC50 - Fish [1]                    | 6.78 mg/l Test organisms (species): Leuciscus idus  |
| EC50 - Crustacea [1]               | 6.8 mg/l Test organisms (species): Daphnia magna  |
| EC50 - Other aquatic organisms [1] | 7 mg/l waterflea  |
| EC50 - Other aquatic organisms [2] | 5 mg/l  |
| EC50 72h - Algae [1]               | 103.8 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) |

#### Limonene (138-86-3)

|                                    |                     |
|------------------------------------|---------------------|
| LC50 - Fish [1]                    | 0.72 mg/l           |
| EC50 - Other aquatic organisms [1] | 0.36 mg/l waterflea |

#### Linalool \* (78-70-6)

|                                    |   |
|------------------------------------|---|
| LC50 - Fish [1]                    | 27.8 mg/l   |
| EC50 - Crustacea [1]               | 59 mg/l Test organisms (species): Daphnia magna   |
| EC50 - Other aquatic organisms [1] | 20 mg/l waterflea   |
| EC50 - Other aquatic organisms [2] | 88.3 mg/l   |
| EC50 96h - Algae [1]               | 88.3 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)  |
| EC50 96h - Algae [2]               | 156.7 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus) |

# Cardamom Essential Oil, Organic, All Origins

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

| <b>Octanal (124-13-0)</b>                       |  |
|---|--|
| EC50 - Crustacea [1]                            | 1.54 mg/l Test organisms (species): Daphnia magna  |
| <b>Terpinolene (586-62-9)</b>                   |  |
| LC50 - Fish [1]                                 | 0.805 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)  |
| EC50 - Crustacea [1]                            | 0.634 mg/l Test organisms (species): Daphnia magna   |
| EC50 72h - Algae [1]                            | 0.692 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) |
| EC50 72h - Algae [2]                            | 0.302 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum) |
| <b>1,8 Cineole (470-82-6)</b>                   |  |
| LC50 - Fish [1]                                 | 57 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)   |
| EC50 - Crustacea [1]                            | > 100 mg/l Test organisms (species): Daphnia magna   |
| EC50 72h - Algae [1]                            | > 74 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)  |
| EC50 96h - Algae [1]                            | > 74 mg/l Test organisms (species): Pseudokirchneriella subcapitata (previous names: Raphidocelis subcapitata, Selenastrum capricornutum)  |
| <b>Geraniol * (106-24-1)</b>                    |  |
| LC50 - Fish [1]                                 | ≈ 22 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)   |
| EC50 - Crustacea [1]                            | 10.8 mg/l Test organisms (species): Daphnia magna  |
| EC50 - Other aquatic organisms [1]              | 10.8 mg/l waterflea  |
| EC50 - Other aquatic organisms [2]              | 13.1 mg/l  |
| EC50 72h - Algae [1]                            | 13.1 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)                                       |
| <b>12.2. Persistence and degradability</b>      |  |
| No additional information available             |  |
| <b>12.3. Bioaccumulative potential</b>          |  |
| <b>Alpha pinene (80-56-8)</b>                   |  |
| Partition coefficient n-octanol/water (Log Pow) | 4.32   |
| <b>Citral (neral + geraniol) * (5392-40-5)</b>  |  |
| Partition coefficient n-octanol/water (Log Pow) | 2.8  |
| <b>Limonene (138-86-3)</b>                      |  |
| Partition coefficient n-octanol/water (Log Pow) | 4.38   |
| <b>Linalool * (78-70-6)</b>                     |  |
| Partition coefficient n-octanol/water (Log Pow) | 2.84   |
| <b>Geraniol * (106-24-1)</b>                    |  |
| Partition coefficient n-octanol/water (Log Pow) | 3.5  |
| <b>12.4. Mobility in soil</b>                   |  |
| No additional information available             |  |
| <b>12.5. Results of PBT and vPvB assessment</b> |  |
| No additional information available             |  |
| <b>12.6. Endocrine disrupting properties</b>    |  |
| No additional information available             |  |
| <b>12.7. Other adverse effects</b>              |  |
| No additional information available             |  |

## SECTION 13: Disposal considerations

### 13.1. Waste treatment methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.  
Additional information : Flammable vapours may accumulate in the container.






# Cardamom Essential Oil, Organic, All Origins

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### SECTION 14: Transport information

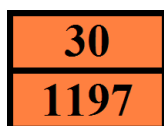
In accordance with ADR / IMDG / IATA / ADN / RID

| ADR   | IMDG   | IATA  | ADN  | RID   |
|---|--|---|--|---|
| <b>14.1. UN number or ID number</b>   |  |   |  |   |
| UN 1197   | UN 1197  | UN 1197   | UN 1197  | UN 1197   |
| <b>14.2. UN proper shipping name</b>  |  |   |  |   |
| EXTRACTS, FLAVOURING, LIQUID  | EXTRACTS, FLAVOURING, LIQUID   | Extracts, flavouring, liquid  | EXTRACTS, FLAVOURING, LIQUID   | EXTRACTS, FLAVOURING, LIQUID  |
| <b>Transport document description</b>   |  |   |  |   |
| UN 1197 EXTRACTS, FLAVOURING, LIQUID, 3, III, (D/E), ENVIRONMENTALLY HAZARDOUS    | UN 1197 EXTRACTS, FLAVOURING, LIQUID, 3, III, MARINE POLLUTANT/ENVIRONMENTALLY HAZARDOUS | UN 1197 Extracts, flavouring, liquid, 3, III, ENVIRONMENTALLY HAZARDOUS           | UN 1197 EXTRACTS, FLAVOURING, LIQUID, 3, III, ENVIRONMENTALLY HAZARDOUS            | UN 1197 EXTRACTS, FLAVOURING, LIQUID, 3, III, ENVIRONMENTALLY HAZARDOUS             |
| <b>14.3. Transport hazard class(es)</b>   |  |   |  |   |
| 3   | 3  | 3   | 3  | 3   |
|  |         |  |  |  |
| <b>14.4. Packing group</b>  |  |   |  |   |
| III   | III  | III   | III  | III   |
| <b>14.5. Environmental hazards</b>  |  |   |  |   |
| Dangerous for the environment: Yes  | Dangerous for the environment: Yes<br>Marine pollutant: Yes                              | Dangerous for the environment: Yes  | Dangerous for the environment: Yes   | Dangerous for the environment: Yes  |
| No supplementary information available  |  |   |  |   |

### 14.6. Special precautions for user

#### Overland transport

Classification code (ADR) : F1  
 Special provisions (ADR) : 601  
 Limited quantities (ADR) : 5I  
 Excepted quantities (ADR) : E1  
 Packing instructions (ADR) : P001, IBC03, LP01, R001  
 Mixed packing provisions (ADR) : MP19  
 Portable tank and bulk container instructions (ADR) : T2  
 Portable tank and bulk container special provisions (ADR) : TP1  
 Tank code (ADR) : LGBF  
 Vehicle for tank carriage : FL  
 Transport category (ADR) : 3  
 Special provisions for carriage - Packages (ADR) : V12  
 Special provisions for carriage - Operation (ADR) : S2  
 Hazard identification number (Kemler No.) : 30  
 Orange plates :



Tunnel restriction code (ADR) : D/E

#### Transport by sea

Special provisions (IMDG) : 223, 955  
 Limited quantities (IMDG) : 5 L

# Cardamom Essential Oil, Organic, All Origins

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

|                                    |  |
|------------------------------------|--|
| Excepted quantities (IMDG)         | : E1   |
| Packing instructions (IMDG)        | : P001, LP01   |
| IBC packing instructions (IMDG)    | : IBC03  |
| Tank instructions (IMDG)           | : T2   |
| Tank special provisions (IMDG)     | : TP1  |
| EmS-No. (Fire)                     | : F-E  |
| EmS-No. (Spillage)                 | : S-D  |
| Stowage category (IMDG)            | : A  |
| Properties and observations (IMDG) | : Usually consist of alcoholic solutions. Miscibility with water depends upon the composition. |

### Air transport

|  |        |
|--|--------|
| PCA Excepted quantities (IATA)               | : E1   |
| PCA Limited quantities (IATA)                | : Y344 |
| PCA limited quantity max net quantity (IATA) | : 10L  |
| PCA packing instructions (IATA)              | : 355  |
| PCA max net quantity (IATA)                  | : 60L  |
| CAO packing instructions (IATA)              | : 366  |
| CAO max net quantity (IATA)                  | : 220L |
| Special provisions (IATA)                    | : A3   |
| ERG code (IATA)                              | : 3L   |

### Inland waterway transport

|                                   |             |
|-----------------------------------|-------------|
| Classification code (ADN)         | : F1        |
| Special provisions (ADN)          | : 601       |
| Limited quantities (ADN)          | : 5 L       |
| Excepted quantities (ADN)         | : E1        |
| Equipment required (ADN)          | : PP, EX, A |
| Ventilation (ADN)                 | : VE01      |
| Number of blue cones/lights (ADN) | : 0         |

### Rail transport

|   |                           |
|---|---------------------------|
| Classification code (RID)                                 | : F1                      |
| Special provisions (RID)                                  | : 601                     |
| Limited quantities (RID)                                  | : 5L                      |
| Excepted quantities (RID)                                 | : E1                      |
| Packing instructions (RID)                                | : P001, IBC03, LP01, R001 |
| Mixed packing provisions (RID)                            | : MP19                    |
| Portable tank and bulk container instructions (RID)       | : T2                      |
| Portable tank and bulk container special provisions (RID) | : TP1                     |
| Tank codes for RID tanks (RID)                            | : LGBF                    |
| Transport category (RID)                                  | : 3                       |
| Special provisions for carriage – Packages (RID)          | : W12                     |
| Colis express (express parcels) (RID)                     | : CE4                     |
| Hazard identification number (RID)                        | : 30                      |

### 14.7. Maritime transport in bulk according to IMO instruments

Not established.

## SECTION 15: Regulatory information

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

#### 15.1.1. EU-Regulations

##### REACH Annex XVII (Restriction List)

No REACH Annex XVII restrictions

##### REACH Annex XIV (Authorisation List)

Cardamom Essential Oil, Organic, All Origins is not on the REACH Annex XIV List

# Cardamom Essential Oil, Organic, All Origins

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

### REACH Candidate List (SVHC)

Cardamom Essential Oil, Organic, All Origins is not on the REACH Candidate List

### PIC Regulation (Prior Informed Consent)

Cardamom Essential Oil, Organic, All Origins is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

### POP Regulation (Persistent Organic Pollutants)

Cardamom Essential Oil, Organic, All Origins is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

### Ozone Regulation (1005/2009)

Cardamom Essential Oil, Organic, All Origins is not subject to REGULATION (EU) No 1005/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 September 2009 on substances that deplete the ozone layer.

### Explosives Precursors Regulation (2019/1148)

Contains no substance subject to Regulation (EU) 2019/1148 of the European Parliament and of the Council of 20 June 2019 on the marketing and use of explosives precursors.

### Drug Precursors Regulation (273/2004)

Contains no substance(s) listed on the Drug Precursors list (Regulation EC 273/2004 on drug precursors)

#### 15.1.2. National regulations

No additional information available

### 15.2. Chemical safety assessment

No chemical safety assessment has been carried out

## SECTION 16: Other information

### Abbreviations and acronyms:

|        |   |
|--------|---|
| ADN    | European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways |
| ADR    | European Agreement concerning the International Carriage of Dangerous Goods by Road             |
| ATE    | Acute Toxicity Estimate   |
| BCF    | Bioconcentration factor   |
| BLV    | Biological limit value  |
| BOD    | Biochemical oxygen demand (BOD)   |
| COD    | Chemical oxygen demand (COD)  |
| DMEL   | Derived Minimal Effect level  |
| DNEL   | Derived-No Effect Level   |
| EC-No. | European Community number   |
| EC50   | Median effective concentration  |
| EN     | European Standard   |
| IARC   | International Agency for Research on Cancer   |
| IATA   | International Air Transport Association   |
| IMDG   | International Maritime Dangerous Goods  |
| LC50   | Median lethal concentration   |
| LD50   | Median lethal dose  |
| LOAEL  | Lowest Observed Adverse Effect Level  |
| NOAEC  | No-Observed Adverse Effect Concentration  |
| NOAEL  | No-Observed Adverse Effect Level  |
| NOEC   | No-Observed Effect Concentration  |
| OECD   | Organisation for Economic Co-operation and Development  |
| OEL    | Occupational Exposure Limit   |
| PBT    | Persistent Bioaccumulative Toxic  |
| PNEC   | Predicted No-Effect Concentration   |

# Cardamom Essential Oil, Organic, All Origins

## Safety Data Sheet

according to the REACH Regulation (EC) 1907/2006 amended by Regulation (EU) 2020/878

| Abbreviations and acronyms: |  |
|-----------------------------|--|
| RID                         | Regulations concerning the International Carriage of Dangerous Goods by Rail |
| SDS                         | Safety Data Sheet  |
| STP                         | Sewage treatment plant   |
| ThOD                        | Theoretical oxygen demand (ThOD)   |
| TLM                         | Median Tolerance Limit   |
| VOC                         | Volatile Organic Compounds   |
| CAS-No.                     | Chemical Abstract Service number   |
| N.O.S.                      | Not Otherwise Specified  |
| vPvB                        | Very Persistent and Very Bioaccumulative                                     |
| ED                          | Endocrine disrupting properties  |

| Full text of H- and EUH-statements: |   |
|-------------------------------------|---|
| Acute Tox. 3 (Inhalation)           | Acute toxicity (inhal.), Category 3                               |
| Acute Tox. 4 (Oral)                 | Acute toxicity (oral), Category 4                                 |
| Aquatic Acute 1                     | Hazardous to the aquatic environment – Acute Hazard, Category 1   |
| Aquatic Chronic 1                   | Hazardous to the aquatic environment – Chronic Hazard, Category 1 |
| Aquatic Chronic 2                   | Hazardous to the aquatic environment – Chronic Hazard, Category 2 |
| Aquatic Chronic 3                   | Hazardous to the aquatic environment – Chronic Hazard, Category 3 |
| Asp. Tox. 1                         | Aspiration hazard, Category 1                                     |
| Eye Irrit. 2                        | Serious eye damage/eye irritation, Category 2                     |
| Flam. Liq. 3                        | Flammable liquids, Category 3                                     |
| 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.                                    |
| H331                                | Toxic if inhaled.   |
| 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.                  |
| H412                                | Harmful to aquatic life with long lasting effects.                |
| Repr. 2                             | Reproductive toxicity, Category 2                                 |
| Skin Irrit. 2                       | Skin corrosion/irritation, Category 2                             |
| Skin Sens. 1                        | Skin sensitisation, Category 1                                    |
| Skin Sens. 1A                       | Skin sensitisation, category 1A                                   |
| Skin Sens. 1B                       | Skin sensitisation, category 1B                                   |

Safety Data Sheet (SDS), EU

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.