



SAFETY DATA SHEET

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

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

1.1. Product identifier

Product name	ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION
Product number	55476
Synonyms; trade names	LEMONGRASS OIL FLEXUOSUS ORGANIC
REACH registration number	01-2120119366-58-XXXX
EC number	943-552-6

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

Identified uses	Cosmetics Fragrance Aromatherapy
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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
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1.4. Emergency telephone number

Emergency telephone	SGS - +32 (0)3 575 55 55 (24h)
Sds No.	55476

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

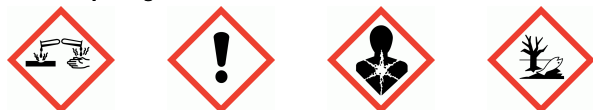
Classification (EC 1272/2008)

Physical hazards	Not Classified
Health hazards	Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317 Asp. Tox. 1 - H304
Environmental hazards	Aquatic Chronic 2 - H411

2.2. Label elements

EC number	943-552-6
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Hazard pictograms



ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

Signal word	Danger
Hazard statements	H315 Causes skin irritation. H318 Causes serious eye damage. H317 May cause an allergic skin reaction. H304 May be fatal if swallowed and enters airways. H411 Toxic to aquatic life with long lasting effects.
Precautionary statements	P261 Avoid breathing vapour/ spray. P273 Avoid release to the environment. P302+P352 IF ON SKIN: Wash with plenty of water. P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P422 Store contents under inert gas. P501 Dispose of contents/ container in accordance with national regulations.
Contains	(E)-3,7-DIMETHYLOCTA-2,6-DIENAL, CITRAL, GERANIOL, P MENTHA 1(7) 2 DIENE, LINALOOL, GERANYL ACETATE, CARYOPHYLLENE, LIMONENE, ISOEUGENOL, (L) HYDROXYCITRONELLAL, CITRONELLOL, NEROL

2.3. Other hazards

This product does not contain any substances classified as PBT or vPvB.

SECTION 3: Composition/information on ingredients

3.1. Substances

(E)-3,7-DIMETHYLOCTA-2,6-DIENAL			30-60%
CAS number: 141-27-5	EC number: 205-476-5		
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1B - H317			
CITRAL			30-60%
CAS number: 5392-40-5	EC number: 226-394-6	REACH registration number: 01-2119462829-23-XXXX	
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317			
GERANIOL			1-5%
CAS number: 106-24-1	EC number: 203-377-1	REACH registration number: 01-2119552430-49-XXXX	
Classification Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1 - H317			

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P MENTHA 1(7) 2 DIENE			1-5%
CAS number: 555-10-2	EC number: 209-081-9		
Classification Flam. Liq. 3 - H226 Asp. Tox. 1 - H304			
LINALOOL			1-5%
CAS number: 78-70-6	EC number: 201-134-4	REACH registration number: 01-2119474016-42-XXXX	
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1B - H317			
GERANYL ACETATE			1-5%
CAS number: 105-87-3	EC number: 203-341-5	REACH registration number: 01-2119973480-35-XXXX	
Classification Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Aquatic Chronic 3 - H412			
CAMPHENE			1-5%
CAS number: 79-92-5	EC number: 201-234-8		
M factor (Acute) = 1	M factor (Chronic) = 1		
Classification Flam. Sol. 2 - H228 Eye Irrit. 2 - H319 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410			
NONAN 4 ONE			1-5%
CAS number: 4485-09-0	EC number: 224-770-4		
Classification Eye Irrit. 2 - H319			

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CARYOPHYLLENE <1%		
CAS number: 87-44-5	EC number: 201-746-1	REACH registration number: 01-2120745237-53-XXXX
Classification Skin Sens. 1 - H317 Asp. Tox. 1 - H304 Aquatic Chronic 4 - H413		
LIMONENE <1%		
CAS number: 138-86-3	EC number: 205-341-0	
M factor (Acute) = 1	M factor (Chronic) = 1	
Classification Flam. Liq. 3 - H226 Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410		
(Z)-3,7-DIMETHYLOCTA-1,3,6,-TRIENE <1%		
CAS number: 3338-55-4	EC number: 222-081-3	
M factor (Acute) = 1		
Classification Flam. Liq. 3 - H226 Skin Irrit. 2 - H315 Asp. Tox. 1 - H304 Aquatic Acute 1 - H400 Aquatic Chronic 2 - H411		
ISOEUGENOL <1%		
CAS number: 97-54-1	EC number: 202-590-7	
Classification Acute Tox. 4 - H302 Acute Tox. 4 - H312 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1A - H317		
(L) HYDROXYCITRONELLAL <1%		
CAS number: 107-75-5	EC number: 203-518-7	
Classification Eye Irrit. 2 - H319 Skin Sens. 1 - H317		

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

NEROL			<1%
CAS number: 106-25-2	EC number: 203-378-7		
Classification Skin Irrit. 2 - H315 Eye Dam. 1 - H318 Skin Sens. 1B - H317			

CITRONELLOL			<1%
CAS number: 106-22-9	EC number: 203-375-0	REACH registration number: 01-2119453995-23-XXXX	
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317			

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

Product name	ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION
REACH registration number	01-2120119366-58-XXXX
EC number	943-552-6
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

Inhalation	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.
Ingestion	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.
Skin contact	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.
Eye contact	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

Ingestion	May be fatal if swallowed and enters airways.
Skin contact	Causes skin irritation. May cause an allergic skin reaction.
Eye contact	Causes serious eye damage.

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

Notes for the doctor	Treat symptomatically. Contact specialist immediately poison treatment if large quantities have been ingested or inhaled
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SECTION 5: Firefighting measures

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

5.1. Extinguishing media

Suitable extinguishing media Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours.

5.3. Advice for firefighters

Protective actions during firefighting Cool containers exposed to heat with water spray and remove them from the fire area if it can be done without risk.

Special protective equipment for firefighters 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

Personal precautions 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

Environmental precautions 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

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 contents under inert gas.

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

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

8.1. Control parameters

CITRAL (CAS: 5392-40-5)

DNEL	Workers - Inhalation; Long term systemic effects: 9 mg/m ³ Workers - Dermal; Long term systemic effects: 1.7 mg/kg/day Consumer - Inhalation; Long term systemic effects: 2.7 mg/m ³ 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

GERANIOL (CAS: 106-24-1)

DNEL	Workers - Inhalation; Long term systemic effects: 161.6 mg/l Workers - Dermal; Long term systemic effects: 12.5 mg/kg Consumer - Oral; Long term systemic effects: 13.75 mg/kg Consumer - Inhalation; Long term systemic effects: 47.8 mg/m ³ Consumer - Dermal; Long term systemic effects: 7.5 mg/kg
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LINALOOL (CAS: 78-70-6)

Ingredient comments	No exposure limits known for ingredient(s).
DNEL	Industry - Dermal; Short term systemic effects: 5 mg/kg/day Industry - Inhalation; Short term systemic effects: 16.5 mg/m ³ Industry - Dermal; Long term systemic effects: 2.5 mg/kg/day Industry - Inhalation; Long term systemic effects: 2.8 mg/m ³ Consumer - Dermal; Short term systemic effects: 2.5 mg/kg/day Consumer - Inhalation; Short term systemic effects: 4.1 mg/m ³ Consumer - Oral; Short term systemic effects: 1.2 mg/kg/day Consumer - Inhalation; Long term systemic effects: 0.7 mg/m ³ Consumer - Oral; Long term systemic effects: 0.2 mg/kg/day Consumer - Dermal; Short term local effects: 15 mg/cm ² Workers - Dermal; Long term local effects: 15 mg/cm ² Consumer - Dermal; Long term local effects: 15 mg/cm ²
PNEC	- Fresh water; 0.2 mg/l - marine water; 0.02 mg/l - Sediment (Freshwater); 2.22 mg/kg - Sediment (Marinewater); 0.222 mg/kg - Soil; 0.327 mg/kg - STP; > 10 mg/l

GERANYL ACETATE (CAS: 105-87-3)

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DNEL Workers - Inhalation; Long term systemic effects: 62.59 mg/m³
 Workers - Dermal; Long term systemic effects: 35.5 mg/kg
 Consumer - Inhalation; Long term systemic effects: 15.4 mg/m³
 Consumer - Dermal; : 17.75 mg/kg
 Consumer - Oral; : 8.9 mg/kg

PNEC - Fresh water; 3.72 mg/l
 - marine water; 0.372 mg/l
 - STP; 8 mg/l
 - Sediment (Freshwater); 0.442 mg/kg
 - Sediment (Marinewater); 0.0442 mg/kg
 - Soil; 0.0859 mg/kg

LIMONENE (CAS: 138-86-3)

Ingredient comments No exposure limits known for ingredient(s).

DNEL Workers - Dermal; Short term : 222 µg/cm²
 Workers - Inhalation; Long term : 33.3 mg/m³
 General population - Dermal; Short term : 111 µg/cm²
 General population - Inhalation; Long term : 8.33 mg/m³
 General population - Oral; Long term : 4.76 mg/kg

PNEC Fresh water; 5.4 µg/l
 marine water; 0.54 µg/l
 STP; 1.8 mg/l
 Sediment (Freshwater); 1.649 mg/kg/day
 Sediment (Marinewater); 0.165 mg/kg/day
 Soil; 0.328 mg/kg

(L) HYDROXYCITRONELLAL (CAS: 107-75-5)

DNEL Workers - Inhalation; Long term systemic effects: 18 mg/m³
 Workers - Dermal; Long term systemic effects: 1.9 mg/kg
 Workers - Dermal; Short term systemic effects: 0.5 mg/cm²
 Consumer - Inhalation; Long term systemic effects: 5.4 mg/m³
 Consumer - Dermal; Long term systemic effects: 1.1 mg/kg/day
 Consumer - Dermal; Short term local effects: 0.5 mg/cm²
 Consumer - Oral; Long term systemic effects: 0.6 mg/kg

PNEC Fresh water; 0.0316 mg/l
 marine water; 0.00316 mg/l
 STP; 10 mg/l
 Sediment (Freshwater); 0.145 mg/kg
 Sediment (Marinewater); 0.0145 mg/kg
 Soil; 0.0105 mg/kg

TERPINEOL (CAS: 8000-41-7)

Ingredient comments No exposure limits known for ingredient(s).

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DNEL

Consumer - Dermal; Short term : 2.5 mg/kg
 Consumer - Inhalation; Short term : 1.25 mg/m³
 Consumer - Oral; Short term : 2.5 mg/kg
 Consumer - Dermal; Long term : 0.42 mg/kg
 Consumer - Inhalation; Long term : 1.25 mg/m³
 Consumer - Oral; Long term : 0.42 mg/kg
 Workers - Dermal; Short term : 5.0 mg/kg
 Workers - Inhalation; Short term : 5.8 mg/m³
 Workers - Dermal; Long term : 1.17 mg/m³
 Workers - Inhalation; Long term : 5.8 mg/m³

CITRONELLOL (CAS: 106-22-9)

DNEL

Workers - Dermal; Long term systemic effects: 45.8 mg/kg/day
 Workers - Inhalation; Long term systemic effects: 161.6 mg/m³
 Workers - Dermal; Long term local effects: 29.5 mg/cm²
 Consumer - Dermal; Long term systemic effects: 27.5 mg/kg/day
 Consumer - Inhalation; Long term systemic effects: 47.8 mg/m³
 Consumer - Oral; Long term systemic effects: 13.8 mg/kg/day
 Consumer - Dermal; Long term local effects: 29.5 mg/cm²

PNEC

- Fresh water; 0.0024 mg/l
 - marine water; 0.00024 mg/l
 - STP; 580 mg/l
 - Sediment (Freshwater); 0.0256 mg/l
 - Sediment (Marinewater); 0.00256 mg/l
 - Soil; 0.00371 mg/l

DECANAL (CAS: 112-31-2)

DNEL

Industry - Inhalation; Long term systemic effects: 24.9 mg/m³
 Industry - Dermal; Long term systemic effects: 7 mg/kg/day
 Consumer - Inhalation; Long term systemic effects: 6.1 mg/m³
 Consumer - Dermal; Long term systemic effects: 3.5 mg/kg/day
 Consumer - Oral; Long term systemic effects: 3.5 mg/kg/day

PNEC

- Fresh water; 0.00117 mg/l
 - marine water; 0.000117 mg/l
 - STP; 3.16 mg/l

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/manufacturer, 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.

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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	Yellow.
Odour	Characteristic.
Odour threshold	No information available.
pH	No information available.
Melting point	-20°C
Initial boiling point and range	94°C @ 101.3 kPa
Flash point	85.3°C
Evaporation rate	No information available.
Evaporation factor	No information available.
Flammability (solid, gas)	No information available.
Upper/lower flammability or explosive limits	No information available.
Other flammability	No information available.
Vapour pressure	26.66 Pa @ 25°C
Vapour density	No information available.
Relative density	0.881 - 0.905 @ 20°C
Bulk density	No information available.
Solubility(ies)	Soluble in water.
Partition coefficient	log Pow: 2.06 - 6.64
Auto-ignition temperature	240°C
Decomposition Temperature	No information available.
Viscosity	No information available.
Explosive properties	Not considered to be explosive.
Explosive under the influence of a flame	No information available.
Oxidising properties	Does not meet the criteria for classification as oxidising.

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

9.2. Other information

Refractive index	1.477 - 1.489
Particle size	No information available.
Molecular weight	No information available.
Volatility	No information available.
Saturation concentration	No information available.
Critical temperature	No information available.
Volatile organic compound	No information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity	No test data specifically related to reactivity available for this product or its ingredients.
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10.2. Chemical stability

Stability	Stable at normal ambient temperatures and when used as recommended.
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10.3. Possibility of hazardous reactions

Possibility of hazardous reactions	Under normal conditions of storage and use, no hazardous reactions will occur.
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10.4. Conditions to avoid

Conditions to avoid	Avoid exposure to high temperatures or direct sunlight.
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10.5. Incompatible materials

Materials to avoid	Oxidising agents.
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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.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Skin corrosion/irritation

Skin corrosion/irritation	Causes skin irritation.
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Serious eye damage/irritation

Serious eye damage/irritation	Causes serious eye damage.
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Respiratory sensitisation

Respiratory sensitisation	No information available.
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Skin sensitisation

Skin sensitisation	May cause an allergic skin reaction.
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Germ cell mutagenicity

Genotoxicity - in vitro	No information available.
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Carcinogenicity

Carcinogenicity	No information available.
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ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

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.

Ingestion May be fatal if swallowed and enters airways.

Skin contact Causes skin irritation. May cause an allergic skin reaction.

Eye contact Causes serious eye damage.

Toxicological information on ingredients.

CITRAL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 6,800.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 6800 mg/kg, Oral, Rat

ATE oral (mg/kg) 6,800.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 2,250.0

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ 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.

GERANIOL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 3,600.0

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Species	Rat
Notes (oral LD₅₀)	LD ₅₀ 3600 mg/kg, Oral, Rat
ATE oral (mg/kg)	3,600.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg)	5,001.0
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Species	Rabbit
Notes (dermal LD₅₀)	LD ₅₀ > 5000 mg/kg, Dermal, Rabbit
ATE dermal (mg/kg)	5,001.0

Skin corrosion/irritation

Skin corrosion/irritation	Causes skin irritation. Severe skin irritation. Rabbit
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Serious eye damage/irritation

Serious eye damage/irritation	Causes serious eye damage. Severe irritation. Cornea score: 3.1 - Rabbit
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Skin sensitisation

Skin sensitisation	May cause an allergic skin reaction. Local Lymph Node Assay (LLNA) - Mouse: Sensitising.
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LINALOOL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg)	2,790.0
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Species	Rat
Notes (oral LD₅₀)	LD ₅₀ 2790 mg/kg, Oral, Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg)	5,610.0
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Species	Rabbit
Notes (dermal LD₅₀)	LD ₅₀ 5610 mg/kg, Dermal, Rabbit

Skin corrosion/irritation

Skin corrosion/irritation	Irritating to skin. Rabbit
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Serious eye damage/irritation

Serious eye damage/irritation	Slightly irritating. Rabbit
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Skin sensitisation

Skin sensitisation	May cause an allergic skin reaction. - Rabbit: Sensitising.
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Germ cell mutagenicity

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Genotoxicity - in vitro Bacterial reverse mutation test: Negative.

Carcinogenicity

Carcinogenicity No information available.

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 NOAEL 117 mg/kg, Oral, Rat NOAEL 250 mg/kg, Dermal, Rat

Aspiration hazard

Aspiration hazard No information available.

Inhalation May cause respiratory irritation.

Ingestion Ingestion may cause severe irritation of the mouth, the oesophagus and the gastrointestinal tract.

Skin contact Irritating to skin. May cause an allergic skin reaction.

Eye contact Causes eye irritation.

GERANYL ACETATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 6,330.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 6330 mg/kg, Oral, Rat

ATE oral (mg/kg) 6,330.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,460.0

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ 5460 mg/kg, Dermal, Rabbit

ATE dermal (mg/kg) 5,460.0

Skin corrosion/irritation

Skin corrosion/irritation Irritating to skin. Rabbit

Skin sensitisation

Skin sensitisation Local Lymph Node Assay (LLNA) - Mouse: Sensitising.

CAMPHENE

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ >5000 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ >2500 mg/kg, Dermal, Rabbit

Inhalation May cause respiratory system irritation.

Ingestion May cause stomach pain or vomiting.

Skin contact Slightly irritating.

Eye contact Irritating to eyes.

NONAN 4 ONE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 3,250.0

Species Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 3,000.0

Species Rabbit

ATE dermal (mg/kg) 3,000.0

CARYOPHYLLENE

Skin sensitisation

Skin sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative.

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways.

LIMONENE

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.

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

Carcinogenicity No information available.

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 No information available.

Inhalation Irritating to respiratory system. May cause damage to mucous membranes in nose, throat, lungs and bronchial system.

Ingestion Liquid irritates mucous membranes and may cause abdominal pain if swallowed.

Skin contact Irritating to skin. May cause an allergic skin reaction.

Eye contact May cause temporary eye irritation.

ISOEUGENOL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 1,560.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 1560 mg/kg, Oral, Rat

ATE oral (mg/kg) 1,560.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 1,900.0

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ 1900 mg/kg, Dermal, Rabbit

ATE dermal (mg/kg) 1,900.0

(L) HYDROXYCITRONELLAL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 6,400.0

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

Species	Rat
Notes (oral LD₅₀)	LD ₅₀ 6400 mg/kg, Oral, Rat
ATE oral (mg/kg)	6,400.0
<u>Acute toxicity - dermal</u>	
Notes (dermal LD₅₀)	LD ₅₀ > 2000 mg/kg, Dermal, Rabbit
<u>Skin sensitisation</u>	
Skin sensitisation	Patch test - Rabbit: Sensitising.

TERPINEOL

<u>Acute toxicity - oral</u>	
Notes (oral LD₅₀)	No specific test data are available.
<u>Skin corrosion/irritation</u>	
Animal data	Irritating to skin.
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Causes serious eye irritation.
<u>Respiratory sensitisation</u>	
Respiratory sensitisation	Data lacking.
<u>Skin sensitisation</u>	
Skin sensitisation	No information available.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Data lacking.
<u>Carcinogenicity</u>	
Carcinogenicity	Data lacking.
<u>Reproductive toxicity</u>	
Reproductive toxicity - fertility	Data lacking.
<u>Specific target organ toxicity - single exposure</u>	
STOT - single exposure	Based on available data the classification criteria are not met.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	Based on available data the classification criteria are not met.
<u>Aspiration hazard</u>	
Aspiration hazard	No information available.
<u>Inhalation</u>	
Inhalation	Gas or vapour in high concentrations may irritate the respiratory system.
<u>Ingestion</u>	
Ingestion	The product irritates mucous membranes and may cause abdominal discomfort if swallowed.
<u>Skin contact</u>	
Skin contact	Irritating to skin.

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

Eye contact Causes serious eye irritation.

DL-BORNEOL

Acute toxicity - inhalation

ATE inhalation 1.5
(dusts/mists mg/l)

NEROL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ 4,500.0
mg/kg)

Species Rat

Notes (oral LD₅₀) LD₅₀ 4500 mg/kg, Oral, Rat

ATE oral (mg/kg) 4,500.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ 5,001.0
mg/kg)

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ > 5000 mg/kg, Dermal, Rabbit

ATE dermal (mg/kg) 5,001.0

CITRONELLOL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ 3,450.0
mg/kg)

Species Rat

Notes (oral LD₅₀) LD₅₀ 3450 mg/kg, Oral, Rat

ATE oral (mg/kg) 3,450.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ 2,650.0
mg/kg)

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ 2650 mg/kg, Dermal, Rabbit

ATE dermal (mg/kg) 2,650.0

Skin corrosion/irritation

Skin corrosion/irritation Irritating to skin. Rabbit

Serious eye damage/irritation

Serious eye Irritating to eyes. Rabbit
damage/irritation

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

Skin sensitisation

Skin sensitisation - Rabbit: Sensitising.

DECANAL

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ 33320 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ 4173 mg/kg, Dermal, Rabbit

Skin corrosion/irritation

Animal data Erythema/eschar score: Well defined erythema (2).

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation. Conjunctivae score: 2 Rabbit

Respiratory sensitisation

Respiratory sensitisation Not sensitising.

Skin sensitisation

Skin sensitisation - Human: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative. OECD 471
DNA damage and/or repair: Negative. OECD 474

Reproductive toxicity

Reproductive toxicity - fertility This substance has no evidence of toxicity to reproduction.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL (90d) 20,000 mg/kg, Oral, Rat

SECTION 12: Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Ecological information on ingredients.

LINALOOL

Ecotoxicity The product components are not classified as environmentally hazardous.
However, large or frequent spills may have hazardous effects on the environment.

CAMPHENE

Ecotoxicity Very toxic to aquatic life with long lasting effects.

CARYOPHYLLENE

Ecotoxicity May cause long lasting harmful effects to aquatic life.

LIMONENE

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

Ecotoxicity Very toxic to aquatic life with long lasting effects.

TERPINEOL

Ecotoxicity The product components are not classified as environmentally hazardous.
However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

12.1. Toxicity

Toxicity Toxic to aquatic life.

Ecological information on ingredients.

CITRAL

Acute aquatic toxicity

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

GERANIOL

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hour: 14 - 22 mg/l, Fish OECD 203
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hour: 10.8 mg/l, Daphnia magna OECD 202
Acute toxicity - aquatic plants	IC ₅₀ , 72 hour: 13.1 mg/l, Algae OECD 201

LINALOOL

Toxicity Not considered toxic to fish.

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 27.8 mg/l, Fish OECD 203
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 59 mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC ₅₀ , 72 hours: 156.7 mg/l, Algae

GERANYL ACETATE

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 68.12 mg/l, Fish OECD 203
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ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 14.1 mg/l, Daphnia magna
OECD 202

Acute toxicity - aquatic plants IC₅₀, 72 hours: 3.72 mg/l,
OECD 201
NOEC, 72 hour: 0.585 mg/l, Algae
OECD 201

CAMPHENE

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

Acute toxicity - fish LC₅₀, 96 hours: 0.1-1 mg/l, Fish

Chronic aquatic toxicity

M factor (Chronic) 1

CARYOPHYLLENE

Toxicity May cause long lasting harmful effects to aquatic life.

LIMONENE

Toxicity Very toxic to aquatic organisms.

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

Acute toxicity - fish LC₅₀, 96 hours: 0.702 - 0.720 mg/l, Pimephales promelas (Fat-head Minnow)

Acute toxicity - aquatic invertebrates EC₅₀, 48 hours: 70 mg/l, Daphnia magna

Acute toxicity - aquatic plants ErC₅₀, 72 hours: 8 mg/l, Algae

Chronic aquatic toxicity

M factor (Chronic) 1

Chronic toxicity - aquatic invertebrates NOEC, 21 days: 0.27 mg/l, Daphnia magna

(Z)-3,7-DIMETHYLOCTA-1,3,6,-TRIENE

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

(L) HYDROXYCITRONELLAL

Acute aquatic toxicity

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

Acute toxicity - fish	LC ₅₀ , 96 hour: 31.6 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hour: 410 mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC ₅₀ , 72 hour: 123.32 mg/l, Algae

TERPINEOL

Toxicity	Not considered toxic to fish.
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DL-BORNEOL

Acute aquatic toxicity

Acute toxicity - fish	Chronic, NOEC, 21 day: 0.011 mg/l, Fish
Acute toxicity - aquatic plants	Chronic, NOEC, 72 hour: 0.011 mg/l, Algae

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates	Chronic, NOEC, 21 day: 0.011 mg/l, Daphnia magna
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CITRONELLOL

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 14.6 mg/l,
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 17.5 mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC ₅₀ , 72 hours: 2.4 mg/l, Algae

DECANAL

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 1.45 mg/l, Freshwater fish OECD 203
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 1.17 mg/l, Daphnia magna OECD 202
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 4.5 mg/l, Freshwater algae OECD 201 Chronic, NOEC, 72 hour: 0.759 mg/l, Algae OECD 201

12.2. Persistence and degradability

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

Ecological information on ingredients.

CITRAL

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

Persistence and degradability The substance is readily biodegradable.

Biodegradation - Degradation 85 - 95%: 28 days
OECD 301C

GERANIOL

Persistence and degradability The product is readily biodegradable.

Biodegradation - Degradation 90 - 100%: 28 day
OECD 301A
- Degradation 82%: 28 day
OECD 301D

LINALOOL

Persistence and degradability The product is readily biodegradable.

Biodegradation The substance is readily biodegradable.
- Degradation (%) 64.2%: 28 days
OECD 301D

GERANYL ACETATE

Persistence and degradability The substance is readily biodegradable.

Biodegradation - Degradation > 70%: 28 days
OECD 301F

LIMONENE

Persistence and degradability The product is not expected to be biodegradable.

(L) HYDROXYCITRONELLAL

Persistence and degradability The product is readily biodegradable.

Biodegradation - Degradation 80 - 90%: 28 day
OECD 301F

TERPINEOL

Persistence and degradability The product is readily biodegradable.

DL-BORNEOL

Persistence and degradability The product is readily biodegradable.

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

CITRONELLOL

Persistence and degradability	The substance is readily biodegradable.
Biodegradation	- Degradation 80 - 90%: 28 days OECD 301F

DECANAL

Biodegradation	The substance is readily biodegradable. - Degradation 82%: 28 days OECD 301F
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12.3. Bioaccumulative potential

Bioaccumulative potential	No data available on bioaccumulation.
Partition coefficient	log Pow: 2.06 - 6.64

Ecological information on ingredients.

CITRAL

Bioaccumulative potential	Bioaccumulation is unlikely. BCF: 89.72,
Partition coefficient	log Pow: 2.76

GERANIOL

Bioaccumulative potential	Bioaccumulation is unlikely.
Partition coefficient	log Pow: 2.6

LINALOOL

Bioaccumulative potential	The product is not bioaccumulating.
Partition coefficient	log Kow: 2.7

GERANYL ACETATE

Bioaccumulative potential	Potentially bioaccumulating.
Partition coefficient	log Pow: 4.5

CAMPHENE

Bioaccumulative potential	Potentially bioaccumulating.
Partition coefficient	log Pow: 4.5

CARYOPHYLLENE

Bioaccumulative potential	Potentially bioaccumulating.
Partition coefficient	log Pow: 6.23

LIMONENE

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

Bioaccumulative potential BCF: 490 - 1460,

Partition coefficient log Pow: 4.59

(L) HYDROXYCITRONELLAL

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 1.6

TERPINEOL

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 2.67

CITRONELLOL

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 3.41

DECANAL

Bioaccumulative potential May accumulate in soil and water systems. BCF: 190,

Partition coefficient log Pow: 3.8

12.4. Mobility in soil

Mobility Soluble in water.

Ecological information on ingredients.

LINALOOL

Mobility The product is insoluble in water.

CAMPHENE

Mobility The product is insoluble in water.

LIMONENE

Mobility The product is insoluble in water.

TERPINEOL

Mobility Immiscible with water.

12.5. Results of PBT and vPvB assessment

Results of PBT and vPvB assessment This product does not contain any substances classified as PBT or vPvB.

Ecological information on ingredients.

LINALOOL

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

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

LIMONENE

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

TERPINEOL

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.

LINALOOL

Other adverse effects Not determined.

LIMONENE

Other adverse effects No information available.

TERPINEOL

Other adverse effects No information available.

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

14.1. UN number

UN No. (ADR/RID)	3082
UN No. (IMDG)	3082
UN No. (ICAO)	3082
UN No. (ADN)	3082

14.2. UN proper shipping name

Proper shipping name (ADR/RID) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS CAMPHENE, LIMONENE)

Proper shipping name (IMDG) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS CAMPHENE, LIMONENE)

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

Proper shipping name (ICAO) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS CAMPHENE, LIMONENE)

Proper shipping name (ADN) ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (CONTAINS CAMPHENE, LIMONENE)

14.3. Transport hazard class(es)

ADR/RID class	9
ADR/RID classification code	M6
ADR/RID label	9
IMDG class	9
ICAO class/division	9
ADN class	9

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-A, S-F
ADR transport category	3
Emergency Action Code	•3Z
Hazard Identification Number (ADR/RID)	90
Tunnel restriction code	(-)

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

SECTION 15: Regulatory information

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

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

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 E2

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

Canada - DSL/NDL

All the ingredients are listed or exempt.

US - TSCA

All the ingredients are listed or exempt.

Australia - AICS

All the ingredients are listed or exempt.

Korea - KECI

All the ingredients are listed or exempt.

China - IECSC

All the ingredients are listed or exempt.

Philippines – PICCS

All the ingredients are listed or exempt.

SECTION 16: Other information

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

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.
 LC₅₀: Lethal Concentration to 50 % of a test population.
 LD₅₀: 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.
 EC₅₀: 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

19/07/2021

Version number

2.001

Supersedes date

05/10/2020

ESSENTIAL OIL OBTAINED FROM THE LEAVES OF CYMBOPOGON FLEXUOSUS, GRAMINEAE BY DISTILLATION

SDS number	55476
SDS status	Approved.
Hazard statements in full	H226 Flammable liquid and vapour. H228 Flammable solid. H302 Harmful if swallowed. H304 May be fatal if swallowed and enters airways. H312 Harmful in contact with skin. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H411 Toxic to aquatic life with long lasting effects. H412 Harmful to aquatic life with long lasting effects. H413 May cause long lasting harmful effects to aquatic life.
Signature	Jitendra Panchal

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