



SAFETY DATA SHEET ORGANIC GERANIUM OIL

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

1.1. Product identifier

Product name	ORGANIC GERANIUM OIL
Product number	55449
Synonyms; trade names	GERANIUM OIL ORGANIC
REACH registration number	01-2120769423-50-XXXX
CAS number	90082-51-2
EC number	290-140-0
FEMA	2508

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

Identified uses	Cosmetics perfumery
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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.	55449

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 Irrit. 2 - H319 Skin Sens. 1 - H317
Environmental hazards	Not Classified

2.2. Label elements

EC number	290-140-0
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Hazard pictograms



ORGANIC GERANIUM OIL

Signal word	Warning
Hazard statements	H315 Causes skin irritation. H319 Causes serious eye irritation. H317 May cause an allergic skin reaction.
Precautionary statements	P264 Wash contaminated skin thoroughly after handling. 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. P501 Dispose of contents/ container in accordance with national regulations.
Contains	CITRONELLOL, GERANIOL, CITRONELLYL FORMATE, LINALOOL, GERANYL FORMATE, MENTHONE, CARYOPHYLLENE, (E)-3,7-DIMETHYLOCTA-2,6-DIENAL, CITRONELLYL BUTYRATE, GERANYL ACETATE, 3,7-DIMETHYL-6-OCTENYL 2-METHYLCROTONATE, NEROL, (Z)-3,7-DIMETHYLOCTA-2,6-DIENAL, 2-PINENE, (R)-P-MENTHA-1,8-DIENE, CITRONELLAL

2.3. Other hazards

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

SECTION 3: Composition/information on ingredients

3.1. Substances

CITRONELLOL 30-60%		
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		
GERANIOL 10-30%		
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		
CITRONELLYL FORMATE 5-10%		
CAS number: 105-85-1	EC number: 203-338-9	
Classification Skin Irrit. 2 - H315 Skin Sens. 1B - H317		

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ISO MENTHONE			5-10%
CAS number: 491-07-6	EC number: 207-727-4		
Classification Flam. Liq. 3 - H226 Aquatic Chronic 3 - H412			
LINALOOL			5-10%
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 FORMATE			1-5%
CAS number: 105-86-2	EC number: 203-339-4		
Classification Skin Sens. 1B - H317			
MENTHONE			1-5%
CAS number: 89-80-5	EC number: 201-941-1		
Classification Skin Irrit. 2 - H315 Skin Sens. 1B - H317			
(2R-CIS)-TETRAHYDRO-4-METHYL-2-(2-METHYL-1-PROPENYL)-2H-PYRAN			1-5%
CAS number: 4610-11-1	EC number: 225-017-2		
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Repr. 2 - H361			
CARYOPHYLLENE			1-5%
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			

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(E)-3,7-DIMETHYLOCTA-2,6-DIENAL			<1%
CAS number: 141-27-5		EC number: 205-476-5	
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1B - H317			

CITRONELLYL BUTYRATE			<1%
CAS number: 141-16-2		EC number: 205-463-4	
M factor (Acute) = 1		M factor (Chronic) = 1	
Classification Skin Sens. 1B - H317 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410			

TETRAHYDRO-4-METHYL-2-(2-METHYLPROP-1-ENYL)PYRAN			<1%
CAS number: 16409-43-1		EC number: 240-457-5	
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Repr. 2 - H361f Aquatic Chronic 3 - H412			

GERANYL ACETATE			<1%
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			

3,7-DIMETHYL-6-OCTENYL 2-METHYLCROTONATE			<1%
CAS number: 24717-85-9		EC number: 246-426-2	
M factor (Chronic) = 10			
Classification Skin Sens. 1B - H317 Aquatic Chronic 1 - H410			

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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			
(Z)-3,7-DIMETHYLOCTA-2,6-DIENAL			<1%
CAS number: 106-26-3	EC number: 203-379-2		
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1B - H317			
2-PINENE			<1%
CAS number: 80-56-8	EC number: 201-291-9		
M factor (Acute) = 1	M factor (Chronic) = 1		
Classification Flam. Liq. 3 - H226 Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Asp. Tox. 1 - H304 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410			
(R)-P-MENTHA-1,8-DIENE			<1%
CAS number: 5989-27-5	EC number: 227-813-5	REACH registration number: 01-2119529223-47-XXXX	
M factor (Acute) = 1	M factor (Chronic) = 1		
Classification Flam. Liq. 3 - H226 Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Asp. Tox. 1 - H304 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410			

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CITRONELLAL	<1%
CAS number: 106-23-0	EC number: 203-376-6
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317	
PARA CYMENE	<1%
CAS number: 99-87-6	EC number: 202-796-7
Classification Flam. Liq. 3 - H226 Repr. 2 - H361 Asp. Tox. 1 - H304 Aquatic Chronic 2 - H411	

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

Product name	ORGANIC GERANIUM OIL
REACH registration number	01-2120769423-50-XXXX
CAS number	90082-51-2
EC number	290-140-0
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

Skin contact	Causes skin irritation. May cause an allergic skin reaction. Symptoms following overexposure may include the following: Irritation. Redness.
Eye contact	Causes serious eye irritation.

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

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5.1. Extinguishing media

Suitable extinguishing media Use fire-extinguishing media suitable for the surrounding fire.

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.

7.3. Specific end use(s)

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

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

ORGANIC GERANIUM OIL

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/m ³
	Workers - Dermal; Long term local effects: 29.5 mg/cm ²
	Consumer - Dermal; Long term systemic effects: 27.5 mg/kg/day
	Consumer - Inhalation; Long term systemic effects: 47.8 mg/m ³
	Consumer - Oral; Long term systemic effects: 13.8 mg/kg/day
	Consumer - Dermal; Long term local effects: 29.5 mg/cm ²

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

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

ISO MENTHONE (CAS: 491-07-6)

Ingredient comments	WEL = Workplace Exposure Limits
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LINALOOL (CAS: 78-70-6)

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

TETRAHYDRO-4-METHYL-2-(2-METHYLPROP-1-ENYL)PYRAN (CAS: 16409-43-1)

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DNEL Workers - Dermal; Long term systemic effects: 0.3 mg/kg
Workers - Inhalation; Long term systemic effects: 1.2 mg/m³
Consumer - Inhalation; Long term systemic effects: 0.3 mg/m³
Consumer - Dermal; Long term systemic effects: 0.2 mg/kg
Consumer - Oral; Long term systemic effects: 0.2 mg/kg

PNEC - Fresh water; 0.0332 mg/l
- marine water; 0.00332 mg/l
- STP; 10 mg/l
- Sediment (Freshwater); 2.29 mg/kg
- Sediment (Marinewater); 0.229 mg/kg
- Soil; 0.437 mg/kg

GERANYL ACETATE (CAS: 105-87-3)

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

CITRONELLYL ACETATE (CAS: 150-84-5)

DNEL Workers - Inhalation; Long term systemic effects: 17 mg/m³
Workers - Dermal; Long term systemic effects: 4.8 mg/kg
Consumer - Inhalation; Long term systemic effects: 4.2 mg/m³
Consumer - Dermal; Long term systemic effects: 2.4 mg/kg
Consumer - Oral; Long term systemic effects: 2.4 mg/kg

PNEC - Fresh water; 0.00348 mg/l
- marine water; 0.000348 mg/l
- STP; 10 mg/l
- Sediment (Freshwater); 0.851 mg/kg
- Sediment (Marinewater); 0.0851 mg/kg
- Soil; 0.168 mg/kg

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

DNEL Workers - Inhalation; Long term systemic effects: 66.7 mg/m³
Workers - Dermal; Long term systemic effects: 9.5 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 16.6 mg/m³
Consumer - Dermal; Long term systemic effects: 4.8 mg/kg/day
Consumer - Oral; Long term systemic effects: 4.8 mg/kg/day

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PNEC

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

CITRONELLAL (CAS: 106-23-0)

DNEL

Workers - Dermal; Long term systemic effects: 1.7 mg/kg
 Workers - Dermal; Long term local effects: 0.14 mg/cm²
 Workers - Inhalation; Long term systemic effects: 9 mg/m³
 Consumer - Dermal; Long term systemic effects: 1 mg/kg
 Consumer - Dermal; Short term local effects: 0.14 mg/cm²
 Consumer - Inhalation; Long term systemic effects: 2.7 mg/m³
 Consumer - Oral; Long term systemic effects: 0.6 mg/kg

PNEC

Fresh water; 0.00868 mg/l
 marine water; 0.00087 mg/l
 Soil; 0.0267 mg/l
 STP; 4 mg/l

HEXAN-1-OL (CAS: 111-27-3)

DNEL

Workers - Dermal; Short term systemic effects: 125 mg/kg
 Workers - Inhalation; Short term systemic effects: 220 mg/m³
 Workers - Dermal; Long term systemic effects: 125 mg/kg
 Workers - Inhalation; Long term systemic effects: 220 mg/m³
 Consumer - Dermal; Short term systemic effects: 75 mg/kg
 Consumer - Inhalation; Short term systemic effects: 65 mg/m³
 Consumer - Oral; Short term systemic effects: 75 mg/kg
 Consumer - Dermal; Long term systemic effects: 75 mg/kg
 Consumer - Inhalation; Long term systemic effects: 65 mg/m³
 Consumer - Oral; Long term systemic effects: 75 mg/kg

PNEC

- Fresh water; 2.6 mg/l
 - marine water; 0.256 mg/l
 - STP; 63.2 mg/l
 - Sediment (Freshwater); 5.08 mg/kg
 - Sediment (Marinewater); 0.5 mg/kg
 - Soil; 2.8 mg/kg

OCTANOL (CAS: 111-87-5)

DNEL

Workers - Dermal; Short term systemic effects: 125 mg/kg/day
 Workers - Inhalation; Short term systemic effects: 220 mg/m³
 Workers - Dermal; Long term systemic effects: 125 mg/kg/day
 Workers - Inhalation; Long term systemic effects: 220 mg/m³
 Consumer - Inhalation; Short term systemic effects: 65 mg/m³
 Consumer - Oral; Short term systemic effects: 75 mg/kg/day
 Consumer - Dermal; Long term systemic effects: 75 mg/kg/day
 Consumer - Inhalation; Long term systemic effects: 65 mg/m³
 Consumer - Oral; Long term systemic effects: 75 mg/kg/day

ORGANIC GERANIUM OIL

PNEC

Fresh water; 0.2 mg/l
marine water; 0.02 mg/l
STP; 55.5 mg/l
Sediment (Freshwater); 2.1 mg/kg
Sediment (Marinewater); 0.21 mg/kg
Soil; 1.6 mg/kg

p-MENTHA-1,4(8)-DIENE (CAS: 586-62-9)

DNEL

Workers - Inhalation; Long term systemic effects: 5.12 mg/m³
Workers - Dermal; Long term systemic effects: 1.45 mg/kg/day
Consumer - Inhalation; Long term systemic effects: 1.26 mg/m³
Consumer - Dermal; Long term systemic effects: 0.73 mg/kg/day
Consumer - Oral; Long term systemic effects: 0.73 mg/kg/day

PNEC

Fresh water; 5.2 µg/l
marine water; 0.52 µg/l
STP; 3 mg/l
Sediment (Freshwater); 0.581 mg/kg
Sediment (Marinewater); 58.1 mg/kg
Soil; 113 µg/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.

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	Colourless. or Light. Green.
Odour	Characteristic.
Odour threshold	No information available.

ORGANIC GERANIUM OIL

pH	No information available.
Melting point	No information available.
Initial boiling point and range	No information available.
Flash point	85°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	No information available.
Vapour density	No information available.
Relative density	0.885 - 0.905 @ 20°C
Bulk density	No information available.
Solubility(ies)	Insoluble in water.
Partition coefficient	No information available.
Auto-ignition temperature	No information available.
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.

9.2. Other information

Refractive index	1.461 - 1.477
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.

10.4. Conditions to avoid

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

10.5. Incompatible materials

Materials to avoid No specific recommendations.

10.6. Hazardous decomposition products

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

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Skin corrosion/irritation

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation May cause an allergic skin reaction.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Reproductive toxicity - development No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

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

Ingestion The product irritates mucous membranes and may cause abdominal discomfort if swallowed.

Skin contact Causes skin irritation. May cause an allergic skin reaction. Symptoms following overexposure may include the following: Irritation. Redness.

Eye contact Causes serious eye irritation.

ORGANIC GERANIUM OIL

Toxicological information on ingredients.

CITRONELLOL

Acute toxicity - oral

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

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 mg/kg) 2,650.0

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 damage/irritation Irritating to eyes. Rabbit

Skin sensitisation

Skin sensitisation - Rabbit: Sensitising.

GERANIOL

Acute toxicity - oral

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

Species Rat

Notes (oral LD₅₀) LD₅₀ 3600 mg/kg, Oral, Rat

ATE oral (mg/kg) 3,600.0

Acute toxicity - dermal

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

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ > 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

Skin sensitisation

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

CITRONELLYL FORMATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 8,400.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 8400 mg/kg, Oral, Rat

ATE oral (mg/kg) 8,400.0

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ > 2000 mg/kg, Dermal, Rabbit

ISO MENTHONE

Inhalation Vapour may irritate respiratory system/lungs.

Ingestion May cause stomach pain or vomiting.

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

Eye contact Irritating to eyes.

LINALOOL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 2,790.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 2790 mg/kg, Oral, Rat

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,610.0

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ 5610 mg/kg, Dermal, Rabbit

Skin corrosion/irritation

Skin corrosion/irritation Irritating to skin. Rabbit

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.

Germ cell mutagenicity

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.

MENTHONE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 2,500.0

Species Rat

ATE oral (mg/kg) 2,500.0

Acute toxicity - dermal

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

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.

TETRAHYDRO-4-METHYL-2-(2-METHYLPROP-1-ENYL)PYRAN

ORGANIC GERANIUM OIL

Acute toxicity - oral

Acute toxicity oral (LD ₅₀ mg/kg)	2,001.0
Species	Rat
Notes (oral LD ₅₀)	LD ₅₀ > 2000 mg/kg, Oral, Rat
ATE oral (mg/kg)	2,001.0

Acute toxicity - dermal

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

Skin corrosion/irritation

Animal data	Irritating.
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GERANYL ACETATE

Acute toxicity - oral

Acute toxicity oral (LD ₅₀ mg/kg)	6,330.0
Species	Rat
Notes (oral LD ₅₀)	LD ₅₀ 6330 mg/kg, Oral, Rat
ATE oral (mg/kg)	6,330.0

Acute toxicity - dermal

Acute toxicity dermal (LD ₅₀ mg/kg)	5,460.0
Species	Rabbit
Notes (dermal LD ₅₀)	LD ₅₀ 5460 mg/kg, Dermal, Rabbit
ATE dermal (mg/kg)	5,460.0

Skin corrosion/irritation

Skin corrosion/irritation	Irritating to skin. Rabbit
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Skin sensitisation

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

Acute toxicity - oral

Acute toxicity oral (LD ₅₀ mg/kg)	6,800.0
Species	Rat
Notes (oral LD ₅₀)	LD ₅₀ 6800 mg/kg, Oral, Rat

ORGANIC GERANIUM OIL

ATE oral (mg/kg) 6,800.0

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ 2000 mg/kg, Dermal, Rabbit

Skin corrosion/irritation

Skin corrosion/irritation Irritating to skin. Rabbit

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising.

NEROL

Acute toxicity - oral

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

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 mg/kg) 5,001.0

Species Rabbit

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

ATE dermal (mg/kg) 5,001.0

2-(TETRAHYDRO-5-METHYL-5-VINYL-2-FURYL)PROPAN-2-OL

Acute toxicity - oral

ATE oral (mg/kg) 500.0

2-PINENE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 500.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 3700 mg/kg, Oral, Rat

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,000.0

Species Rat

Notes (dermal LD₅₀) LD₅₀ 5000 mg/kg, Dermal, Rat

ATE dermal (mg/kg) 5,000.0

ORGANIC GERANIUM OIL

Inhalation	May cause respiratory system irritation.
Ingestion	Harmful: may cause lung damage if swallowed.
Skin contact	May cause sensitisation by skin contact.
Eye contact	Irritating to eyes.

MYRCENE

Acute toxicity - oral

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

Acute toxicity - dermal

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

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

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ 4400 mg/kg, Oral, Rat

Acute toxicity - dermal

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

Skin corrosion/irritation

Animal data No information available.

Serious eye damage/irritation

Serious eye damage/irritation No information available.

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation No information available.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

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

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

ORGANIC GERANIUM OIL

Aspiration hazard	May be fatal if swallowed and enters airways. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.
Inhalation	May cause respiratory system irritation.
Ingestion	Harmful: possible risk of irreversible effects if swallowed.
Skin contact	Irritating to skin. May cause sensitisation by skin contact.
Eye contact	May cause temporary eye irritation.

2-[(2S,5S)-5-ETHENYL-5-METHYLOXOLAN-2-YL]PROPAN-2-OL

Acute toxicity - oral

ATE oral (mg/kg)	500.0
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(1E,6E)-1-METHYL-5-METHYLIDENE-8-PROPAN-2-YLCYCLODECA-1,6-DIENE

Acute toxicity - oral

ATE oral (mg/kg)	500.0
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CITRONELLAL

Acute toxicity - oral

Notes (oral LD ₅₀)	LD ₅₀ 2420 mg/kg, Oral, Rat
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Acute toxicity - inhalation

Notes (inhalation LC ₅₀)	LD ₅₀ > 2500 mg/kg, Dermal, Rabbit
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Skin corrosion/irritation

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

Serious eye damage/irritation	Causes serious eye irritation. Irritating to eyes. Rabbit
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Skin sensitisation

Skin sensitisation	May cause an allergic skin reaction. Guinea pig maximization test (GPMT) - Guinea pig: Sensitising.
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Germ cell mutagenicity

Genotoxicity - in vitro	Bacterial reverse mutation test: Negative.
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PARA CYMENE

Acute toxicity - oral

Acute toxicity oral (LD ₅₀ mg/kg)	3,669.0
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Species	Rat
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Notes (oral LD ₅₀)	LD ₅₀ 3669 mg/kg, Oral, Rat
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ATE oral (mg/kg)	3,669.0
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Aspiration hazard

ORGANIC GERANIUM OIL

Aspiration hazard	May be fatal if swallowed and enters airways.
Inhalation	Gas or vapour in high concentrations may irritate the respiratory system. Symptoms following overexposure may include the following: Coughing.
Ingestion	May be fatal if swallowed and enters airways.
Skin contact	Liquid may irritate skin. Repeated exposure may cause skin dryness or cracking.
Eye contact	Vapour or spray in the eyes may cause irritation and smarting.

p-MENTHA-1,5-DIENE

Inhalation	May cause respiratory system irritation.
Ingestion	Swallowing concentrated chemical may cause severe internal injury.
Skin contact	Irritating to skin. May cause sensitisation by skin contact.
Eye contact	Irritating to eyes.

2-ETHENYL-2,6,6-TRIMETHYLTETRAHYDROPYRAN

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 2,700.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 2700 mg/kg, Oral, Rat

ATE oral (mg/kg) 2,700.0

Skin sensitisation

Skin sensitisation Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative.

HEXAN-1-OL

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ >300-2000 mg/kg, Oral, Rat

ATE oral (mg/kg) 500.0

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ >1000-2000 mg/kg, Dermal, Rabbit

ATE dermal (mg/kg) 1,100.0

Acute toxicity - inhalation

Notes (inhalation LC₅₀) LD₅₀ >21 mg/l, Inhalation, Rat

Skin corrosion/irritation

Animal data Slightly irritating. Rabbit OECD 404

Serious eye damage/irritation

ORGANIC GERANIUM OIL

Serious eye damage/irritation Causes serious eye irritation. Rabbit OECD 405

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation Not sensitising. Draize test Guinea pig

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met. NOAEL 1127 mg/kg, Dermal, Rat

Aspiration hazard

Aspiration hazard No information available.

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

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

Skin contact Harmful in contact with skin.

Eye contact Causes serious eye irritation.

P-MENTH-1-EN-4-OL

Acute toxicity - oral

ATE oral (mg/kg) 500.0

OCTANOL

Acute toxicity - oral

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

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ > 2000 mg/kg, Dermal, Rabbit Calculation method.

Skin corrosion/irritation

Skin corrosion/irritation Slightly irritating. Rabbit OECD 404

Serious eye damage/irritation

ORGANIC GERANIUM OIL

Serious eye damage/irritation Causes serious eye irritation. OECD 405

Skin sensitisation

Skin sensitisation Draize test - Guinea pig: Not sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Based on available data the classification criteria are not met.

Carcinogenicity

Carcinogenicity Based on available data the classification criteria are not met.

Reproductive toxicity

Reproductive toxicity - fertility Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

STOT - single exposure Based on available data the classification criteria are not met.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure Based on available data the classification criteria are not met.

Aspiration hazard

Aspiration hazard Based on available data the classification criteria are not met.

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

Ingestion The product irritates mucous membranes and may cause abdominal discomfort if swallowed.

Skin contact May be slightly irritating to skin.

Eye contact Causes serious eye irritation.

p-MENTHA-1,4(8)-DIENE

Acute toxicity - oral

Notes (oral LD₅₀) LD₅₀ 3850 mg/kg, Oral, Rat

Acute toxicity - dermal

Notes (dermal LD₅₀) LD₅₀ > 2000 mg/kg, Dermal, Rabbit

Skin sensitisation

Skin sensitisation May cause an allergic skin reaction.
Guinea pig maximization test (GPMT) - Guinea pig: Sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative.

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways.

CIS-HEX-3-EN-1-OL

Acute toxicity - oral

ORGANIC GERANIUM OIL

Acute toxicity oral (LD₅₀ mg/kg) 4,700.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 4700 mg/kg, Oral, Rat

ATE oral (mg/kg) 4,700.0

Acute toxicity - dermal

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

Skin corrosion/irritation

Skin corrosion/irritation No information available.

Serious eye damage/irritation

Serious eye damage/irritation Causes eye irritation.

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

Skin sensitisation No information available.

Germ cell mutagenicity

Genotoxicity - in vitro No information available.

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility No information available.

Reproductive toxicity - development No information available.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

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

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

Skin contact Slightly irritating.

Eye contact Causes serious eye irritation.

SECTION 12: Ecological information

ORGANIC GERANIUM OIL

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.

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.

CARYOPHYLLENE

Ecotoxicity

May cause long lasting harmful effects to aquatic life.

2-PINENE

Ecotoxicity

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

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

Ecotoxicity

Very toxic to aquatic life with long lasting effects.

PARA CYMENE

Ecotoxicity

Toxic to aquatic life with long lasting effects.

p-MENTHA-1,5-DIENE

Ecotoxicity

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

HEXAN-1-OL

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.

OCTANOL

Ecotoxicity

Harmful to aquatic life with long lasting effects.

CIS-HEX-3-EN-1-OL

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

Not considered toxic to fish.

Ecological information on ingredients.

CITRONELLOL

Acute aquatic toxicity

ORGANIC GERANIUM OIL

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

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

CITRONELLYL FORMATE

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hour: 1.3 mg/l, Fish OECD 203
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hour: 7.6 mg/l, Daphnia magna OECD 202
Acute toxicity - aquatic plants	EC ₅₀ , 72 hour: 3.1 mg/l, Algae

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

CARYOPHYLLENE

Toxicity May cause long lasting harmful effects to aquatic life.

CITRONELLYL BUTYRATE

Acute aquatic toxicity

LE(C)₅₀	0.1 < L(E)C ₅₀ ≤ 1
M factor (Acute)	1

Chronic aquatic toxicity

ORGANIC GERANIUM OIL

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

TETRAHYDRO-4-METHYL-2-(2-METHYLPROP-1-ENYL)PYRAN

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hour: 77.6 mg/l, Fish OECD 203
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 33.2 mg/l, Daphnia magna OECD 202
Acute toxicity - aquatic plants	EC ₅₀ , 72 hour: 79.7 mg/l, Algae OECD 201 EC ₁₀ , 72 hour: 39.1 mg/l, Algae OECD 201

GERANYL ACETATE

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 68.12 mg/l, Fish OECD 203
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 14.1 mg/l, Daphnia magna OECD 202
Acute toxicity - aquatic plants	IC ₅₀ , 72 hours: 3.72 mg/l, OECD 201 NOEC, 72 hour: 0.585 mg/l, Algae OECD 201

3,7-DIMETHYL-6-OCTENYL 2-METHYLCROTONATE

Chronic aquatic toxicity

NOEC	0.001 < NOEC ≤ 0.01
Degradability	Non-rapidly degradable
M factor (Chronic)	10

CITRONELLYL ACETATE

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hour: 6.1 mg/l, Fish OECD 203
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2-PINENE

Acute aquatic toxicity

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

ORGANIC GERANIUM OIL

Chronic aquatic toxicity

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

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

Acute aquatic toxicity

LE(C) ₅₀	0.1 < L(E)C ₅₀ ≤ 1
M factor (Acute)	1
Acute toxicity - fish	LC ₅₀ , 96 hours: 0.8 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 69.6 mg/l, Daphnia magna

Chronic aquatic toxicity

M factor (Chronic)	1
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CITRONELLAL

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hour: 22 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hour: 8.7 mg/l, Daphnia magna
Acute toxicity - aquatic plants	IC ₅₀ , 72 hour: 13.33 mg/l, Algae

PARA CYMENE

Toxicity	Toxic to aquatic life.
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Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hour: 48 ppm, Fish
Acute toxicity - aquatic invertebrates	LC ₅₀ , 48 hour: 6500 µg/l, Daphnia magna

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

Acute aquatic toxicity

LE(C) ₅₀	0.1 < L(E)C ₅₀ ≤ 1
M factor (Acute)	1

2-ETHENYL-2,6,6-TRIMETHYLTETRAHYDROPYRAN

Acute aquatic toxicity

Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 32 mg/l, Daphnia magna OECD 202
Acute toxicity - aquatic plants	EC ₅₀ , 72 hours: 79.7 mg/l, Algae OECD 201

ORGANIC GERANIUM OIL

HEXAN-1-OL

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: >10-100 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC ₀ , 24 hours: >100 mg/l, Daphnia magna OECD 202
Acute toxicity - aquatic plants	EC ₅₀ , 48 hours: >10-100 mg/l, Pseudokirchneriella subcapitata OECD 201

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates	NOEC, 21 days: >1-10 mg/l, Daphnia magna
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OCTANOL

Toxicity	Harmful to aquatic life with long lasting effects.
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Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , : > 10 - 100 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC ₅₀ , : > 10 - 100 mg/l, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , : > 10 - 100 mg/l, Desmodium subspicatus OECD 201
Acute toxicity - microorganisms	EC ₀ , : > 100 mg/l, Activated sludge OECD 209

Chronic aquatic toxicity

Chronic toxicity - aquatic invertebrates	NOEC, : <= 1 mg/l, Daphnia magna
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p-MENTHA-1,4(8)-DIENE

Acute aquatic toxicity

LE(C) ₅₀	0.1 < L(E)C ₅₀ ≤ 1
M factor (Acute)	1
Acute toxicity - fish	LC ₅₀ , 96 hours: 0.72 - 6.104 mg/l, Fish
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hour: 5.184 mg/kg, Daphnia magna
Acute toxicity - aquatic plants	EC ₅₀ , 72 hour: 5.4 mg/l, Algae Chronic, NOEC, 72 hour: 3.47 mg/l, Algae

Chronic aquatic toxicity

M factor (Chronic)	1
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CIS-HEX-3-EN-1-OL

Toxicity	Not considered toxic to fish.
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12.2. Persistence and degradability

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

ORGANIC GERANIUM OIL

Ecological information on ingredients.

CITRONELLOL

Persistence and degradability

The substance is readily biodegradable.

Biodegradation

- Degradation 80 - 90%: 28 days
OECD 301F

GERANIOL

Persistence and degradability

The product is readily biodegradable.

Biodegradation

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

CITRONELLYL FORMATE

Persistence and degradability

The product is readily biodegradable.

Biodegradation

- Degradation 88%: 28 day
OECD 310

LINALOOL

Persistence and degradability

The product is readily biodegradable.

Biodegradation

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

TETRAHYDRO-4-METHYL-2-(2-METHYLPROP-1-ENYL)PYRAN

Persistence and degradability

The product is readily biodegradable.

Biodegradation

- Degradation 79%: 28 days
OECD 301F

GERANYL ACETATE

Persistence and degradability

The substance is readily biodegradable.

Biodegradation

- Degradation > 70%: 28 days
OECD 301F

CITRONELLYL ACETATE

Persistence and degradability

The product is readily biodegradable.

ORGANIC GERANIUM OIL

2-PINENE

Persistence and degradability

The product is readily biodegradable.

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

Persistence and degradability

Not readily biodegradable.

CITRONELLAL

Persistence and degradability

The product is readily biodegradable.

Biodegradation

- Degradation 82%: 28 day
OECD 301B

PARA CYMENE

Persistence and degradability

There are no data on the degradability of this product.

HEXAN-1-OL

Persistence and degradability

The product is readily biodegradable.

Biodegradation

- Degradation >60: 30 days
OECD 301D

OCTANOL

Persistence and degradability

The product is readily biodegradable.

p-MENTHA-1,4(8)-DIENE

Persistence and degradability

The product is readily biodegradable.

Biodegradation

- Degradation 72%: 28 day
OECD 301D

CIS-HEX-3-EN-1-OL

Persistence and degradability

There are no data on the degradability of this product.

12.3. Bioaccumulative potential

Bioaccumulative potential

No data available on bioaccumulation.

Partition coefficient

No information available.

Ecological information on ingredients.

CITRONELLOL

ORGANIC GERANIUM OIL

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 3.41

GERANIOL

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 2.6

CITRONELLYL FORMATE

Bioaccumulative potential Potentially bioaccumulating.

Partition coefficient log Pow: 3.9

LINALOOL

Bioaccumulative potential The product is not bioaccumulating.

Partition coefficient log Kow: 2.7

CARYOPHYLLENE

Bioaccumulative potential Potentially bioaccumulating.

Partition coefficient log Pow: 6.23

TETRAHYDRO-4-METHYL-2-(2-METHYLPROP-1-ENYL)PYRAN

Bioaccumulative potential Potentially bioaccumulating.

Partition coefficient log Pow: 3.3

GERANYL ACETATE

Bioaccumulative potential Potentially bioaccumulating.

Partition coefficient log Pow: 4.5

CITRONELLYL ACETATE

Bioaccumulative potential Potentially bioaccumulating.

Partition coefficient log Pow: 4.9

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

Bioaccumulative potential Potentially bioaccumulating.

Partition coefficient log Pow: 4.38

CITRONELLAL

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 3.62

PARA CYMENE

ORGANIC GERANIUM OIL

Bioaccumulative potential No data available on bioaccumulation.

2-ETHENYL-2,6,6-TRIMETHYLTETRAHYDROPYRAN

Partition coefficient log Pow: 3.9

HEXAN-1-OL

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 1.8

OCTANOL

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Kow: 3.5

p-MENTHA-1,4(8)-DIENE

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 3.7

CIS-HEX-3-EN-1-OL

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient log Pow: 1.697

12.4. Mobility in soil

Mobility Insoluble in water.

Ecological information on ingredients.

LINALOOL

Mobility The product is insoluble in water.

2-PINENE

Mobility The product is insoluble in water.

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

Mobility The product is insoluble in water.

PARA CYMENE

Mobility Not determined.

p-MENTHA-1,5-DIENE

Mobility The product is insoluble in water.

HEXAN-1-OL

Mobility No information available.

ORGANIC GERANIUM OIL

OCTANOL

Mobility Immiscible with water.

CIS-HEX-3-EN-1-OL

Mobility No information available.

12.5. Results of PBT and vPvB assessment

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

Ecological information on ingredients.

LINALOOL

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

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

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

PARA CYMENE

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

HEXAN-1-OL

Results of PBT and vPvB assessment Based on available data the classification criteria are not met.

OCTANOL

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

CIS-HEX-3-EN-1-OL

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

12.6. Other adverse effects

Other adverse effects None known.

Ecological information on ingredients.

LINALOOL

Other adverse effects Not determined.

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

Other adverse effects Not determined.

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PARA CYMENE

Other adverse effects No information available.

HEXAN-1-OL

Other adverse effects Not determined.

OCTANOL

Other adverse effects Not determined.

CIS-HEX-3-EN-1-OL

Other adverse effects None known.

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

General The product is not covered by international regulations on the transport of dangerous goods (IMDG, IATA, ADR/RID).

14.1. UN number

Not applicable.

14.2. UN proper shipping name

Not applicable.

14.3. Transport hazard class(es)

No transport warning sign required.

14.4. Packing group

Not applicable.

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant
No.

14.6. Special precautions for user

Not applicable.

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

ORGANIC GERANIUM OIL

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.

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

15.2. Chemical safety assessment

A chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

SECTION 16: Other information

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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

08/09/2021

Version number

2.001

Supersedes date

18/11/2020

SDS number

55449

ORGANIC GERANIUM OIL

SDS status	Approved.
Hazard statements in full	H226 Flammable liquid and vapour. H302 Harmful if swallowed. H304 May be fatal if swallowed and enters airways. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H318 Causes serious eye damage. H319 Causes serious eye irritation. H361 Suspected of damaging fertility or the unborn child. H361f Suspected of damaging fertility. 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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