



SAFETY DATA SHEET

ORGANIC ROSEMARY VERBENONE OIL

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

1.1. Product identifier

Product name	ORGANIC ROSEMARY VERBENONE OIL
Product number	56196
Synonyms; trade names	ROSEMARY VERBENONE OIL ORGANIC
REACH registration notes	If REACH registration numbers do not appear the substance is either exempt from registration, does not meet the minimum volume threshold for registration (1mT/year)
CAS number	8000-25-7
EC number	283-291-9
FEMA	2992

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

Identified uses	Cosmetics Fragrance Flavouring
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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.	56196

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical hazards	Flam. Liq. 3 - H226
Health hazards	Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1 - H317 STOT SE 2 - H371 Asp. Tox. 1 - H304
Environmental hazards	Aquatic Chronic 2 - H411

2.2. Label elements

EC number	283-291-9
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ORGANIC ROSEMARY VERBENONE OIL

Hazard pictograms



Signal word

Danger

Hazard statements

H226 Flammable liquid and vapour.
 H315 Causes skin irritation.
 H319 Causes serious eye irritation.
 H317 May cause an allergic skin reaction.
 H371 May cause damage to organs .
 H304 May be fatal if swallowed and enters airways.
 H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P273 Avoid release to the environment.
 P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
 P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
 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

2-PINENE, CAMPHOR, LIMONENE, BETA PINENE, MYRCENE, PARA CYMENE, p-MENTHA-1,4(8)-DIENE, P-MENTHA-1,4-DIENE, CARYOPHYLLENE, TERPINEOL, LINALOOL, (4S)-1-METHYL-4-(6-METHYLHEPTA-1,5-DIEN-2-YL)CYCLOHEX-1-ENE

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

2-PINENE		10-30%
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		

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CAMPBOR			10-30%
CAS number: 76-22-2	EC number: 200-945-0	REACH registration number: 01-2119966156-31-XXXX	
Classification Flam. Sol. 2 - H228 Acute Tox. 4 - H302 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Dam. 1 - H318 STOT SE 2 - H371			
CAMPHENE			5-10%
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			
LIMONENE			1-5%
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			
DL-BORNEOL			1-5%
CAS number: 507-70-0	EC number: 208-080-0		
Classification Flam. Sol. 2 - H228 Acute Tox. 4 - H332 Skin Irrit. 2 - H315 Eye Dam. 1 - H318 STOT SE 2 - H371			

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BETA PINENE 1-5% CAS number: 80-56-8 EC number: 201-291-9 M factor (Acute) = 1 M factor (Chronic) = 1
Classification Flam. Liq. 3 - H226 Skin Sens. 1 - H317 Asp. Tox. 1 - H304 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410
MYRCENE 1-5% CAS number: 123-35-3 EC number: 204-622-5
Classification Flam. Liq. 3 - H226 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Asp. Tox. 1 - H304
PARA CYMENE 1-5% CAS number: 99-87-6 EC number: 202-796-7
Classification Flam. Liq. 3 - H226 Acute Tox. 3 - H331 Repr. 2 - H361 Asp. Tox. 1 - H304 Aquatic Chronic 2 - H411
(1R)-1-ISOPROPYL-4-METHYL-CYCLOHEX-3-EN-1-OL 1-5% CAS number: 20126-76-5 EC number: 943-985-0
Classification Acute Tox. 4 - H302 Skin Irrit. 2 - H315 Eye Irrit. 2 - H319

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p-MENTHA-1,4(8)-DIENE			1-5%
CAS number: 586-62-9	EC number: 209-578-0	REACH registration number: 01-2119982324-34-XXXX	
M factor (Acute) = 1	M factor (Chronic) = 1		
Classification Flam. Liq. 3 - H226 Skin Sens. 1B - H317 Asp. Tox. 1 - H304 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410			

P-MENTHA-1,4-DIENE			1-5%
CAS number: 99-85-4	EC number: 202-794-6		
Classification Flam. Liq. 3 - H226 Repr. 2 - H361d Asp. Tox. 1 - H304			

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			

TERPINEOL			<1%
CAS number: 8000-41-7	EC number: 232-268-1	REACH registration number: 01-2119553062-49-XXXX	
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1B - H317 Asp. Tox. 1 - H304 Aquatic Chronic 2 - H411			

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LINALOOL <1%		
CAS number: 78-70-6	EC number: 201-134-4	REACH registration number: 01-2119474016-42-XXXX
Acute Toxicity Estimate (oral): LD ₅₀ 2790 mg/kg, Oral, Rat Acute Toxicity Estimate (dermal): LD ₅₀ 5610 mg/kg, Dermal, Rabbit		
Classification Skin Irrit. 2 - H315 Eye Irrit. 2 - H319 Skin Sens. 1B - H317		

(4S)-1-METHYL-4-(6-METHYLHEPTA-1,5-DIEN-2-YL)CYCLOHEX-1-ENE <1%		
CAS number: 495-61-4	EC number: 610-461-5	
Classification Skin Irrit. 2 - H315 Skin Sens. 1 - H317 Asp. Tox. 1 - H304		

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

Product name	ORGANIC ROSEMARY VERBENONE OIL
REACH registration notes	If REACH registration numbers do not appear the substance is either exempt from registration, does not meet the minimum volume threshold for registration (1mT/year)
CAS number	8000-25-7
EC number	283-291-9
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.

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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

SECTION 5: Firefighting measures

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. Oxides of carbon.

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

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Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place. Keep under Nitrogen Avoid exposure to high temperatures or direct sunlight. Unsuitable container materials: Polyvinyl chloride (PVC).

Storage class Flammable liquid storage.

7.3. Specific end use(s)

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

SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

Occupational exposure limits

CAMPHOR

Long-term exposure limit (8-hour TWA): WEL 2 ppm 13 mg/m³

Short-term exposure limit (15-minute): WEL 3 ppm 19 mg/m³

WEL = Workplace Exposure Limit.

CAMPHOR (CAS: 76-22-2)

DNEL	Workers - Inhalation; Long term systemic effects: 17.632 mg/m³ Workers - Dermal; Long term systemic effects: 10 mg/kg/day General population, Consumer - Inhalation; Long term systemic effects: 4.348 mg/m³ General population, Consumer - Dermal; Long term systemic effects: 5 mg/kg/day General population, Consumer - Oral; Long term systemic effects: 5 mg/kg/day General population - Inhalation; Long term systemic effects: 4.3478 mg/m³ General population - Oral; Long term systemic effects: 5 mg/kg/day General population - Dermal; Long term systemic effects: 5 mg/kg/day Workers - Dermal; Long term systemic effects: 10 mg/kg/day Workers - Inhalation; Long term systemic effects: 17.6316 mg/m³
PNEC	Fresh water; 1.71 µg/l marine water; 0.171 µg/l STP; 1 mg/l Sediment (Freshwater); 0.139 mg/kg Sediment (Marinewater); 0.17 mg/kg Soil; 0.013 µg/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

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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

TERPINEOL (CAS: 8000-41-7)

Ingredient comments	No exposure limits known for ingredient(s).
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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/m³ Industry - Dermal; Long term systemic effects: 2.5 mg/kg/day Industry - Inhalation; Long term systemic effects: 2.8 mg/m³ Consumer - Dermal; Short term systemic effects: 2.5 mg/kg/day Consumer - Inhalation; Short term systemic effects: 4.1 mg/m³ Consumer - Oral; Short term systemic effects: 1.2 mg/kg/day Consumer - Inhalation; Long term systemic effects: 0.7 mg/m³ Consumer - Oral; Long term systemic effects: 0.2 mg/kg/day Consumer - Dermal; Short term local effects: 15 mg/cm² Workers - Dermal; Long term local effects: 15 mg/cm² Consumer - Dermal; Long term local effects: 15 mg/cm²
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

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.

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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. Ensure all respiratory protective equipment is suitable for its intended use and is 'CE'-marked. 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 to pale yellow.
Odour	Characteristic.
Odour threshold	No information available.
pH	No information available.
Melting point	No information available.
Initial boiling point and range	No information available.
Flash point	43°C Closed cup.
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	0.895 - 0.925 @ 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.

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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.
<u>9.2. Other information</u>	
Refractive index	1.450 - 1.474
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. Polyvinyl chloride (PVC).
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10.6. Hazardous decomposition products

Hazardous decomposition products	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapours. Oxides of carbon.
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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - inhalation

ATE inhalation (gases ppm)	23,584.91
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ATE inhalation (vapours mg/l)	57.65
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ATE inhalation (dusts/mists mg/l)	6.95
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Skin corrosion/irritation

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

Serious eye damage/irritation	Causes serious eye irritation.
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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 May cause damage to organs .

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

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

Eye contact Causes serious eye irritation.

Toxicological information on ingredients.

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

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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.

CAMPHOR

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 1,310.0

Species Rat

ATE oral (mg/kg) 1,310.0

Acute toxicity - dermal

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

Acute toxicity - inhalation

Notes (inhalation LC₅₀) Harmful if inhaled.

Skin corrosion/irritation

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye damage.

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.

Specific target organ toxicity - single exposure

STOT - single exposure May cause damage to organs (Lungs) if inhaled.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure No information available.

Aspiration hazard

Aspiration hazard No information available.

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Inhalation	Harmful if inhaled. Dust in high concentrations may irritate the respiratory system.
Ingestion	Harmful if swallowed.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage. Particles in the eyes may cause irritation and smarting.
Acute and chronic health hazards	May cause damage to organs (Lungs) if inhaled.
Route of exposure	Inhalation
Target organs	Lungs

CAMPHENE

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.

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.

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

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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.

DL-BORNEOL

Acute toxicity - inhalation

ATE inhalation (dusts/mists mg/l)	1.5
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BETA PINENE

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)	LD ₅₀ > 5000 mg/kg, Oral, Rat
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Acute toxicity - dermal

Notes (dermal LD₅₀)	LD ₅₀ > 5000 mg/kg, Dermal, Rabbit
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PARA CYMENE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg)	3,669.0
Species	Rat
Notes (oral LD₅₀)	LD ₅₀ 3669 mg/kg, Oral, Rat
ATE oral (mg/kg)	3,669.0
<u>Acute toxicity - inhalation</u>	
ATE inhalation (vapours mg/l)	3.0

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Aspiration hazard

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.

(1R)-1-ISOPROPYL-4-METHYL-CYCLOHEX-3-EN-1-OL

Acute toxicity - oral

ATE oral (mg/kg) 500.0

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.

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.

Toxicokinetics The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

TERPINEOL

Acute toxicity - oral

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Notes (oral LD₅₀) No specific test data are available.

Skin corrosion/irritation

Animal data Irritating to skin.

Serious eye damage/irritation

Serious eye damage/irritation Causes serious eye irritation.

Respiratory sensitisation

Respiratory sensitisation Data lacking.

Skin sensitisation

Skin sensitisation Sensitising.

Germ cell mutagenicity

Genotoxicity - in vitro Data lacking.

Carcinogenicity

Carcinogenicity Data lacking.

Reproductive toxicity

Reproductive toxicity - fertility Data lacking.

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

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

Eye contact Causes serious eye irritation.

ALPHA-TERPINENE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 680.0

Species Rat

ATE oral (mg/kg) 680.0

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways.

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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

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.

Toxicokinetics

The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Inhalation

May cause respiratory irritation.

Ingestion

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

ORGANIC ROSEMARY VERBENONE OIL

Skin contact	Irritating to skin. May cause an allergic skin reaction.
Eye contact	Causes eye irritation.

SECTION 12: Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Ecological information on ingredients.

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.

CAMPHOR

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.

CAMPHENE

Ecotoxicity Very toxic to aquatic life with long lasting effects.

LIMONENE

Ecotoxicity Very toxic to aquatic life with long lasting effects.

BETA 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.

PARA CYMENE

Ecotoxicity Toxic to aquatic life with long lasting effects.

CARYOPHYLLENE

Ecotoxicity May cause long lasting harmful effects to aquatic life.

TERPINEOL

Ecotoxicity Toxic to aquatic life with long lasting effects.

LINALOOL

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

12.1. Toxicity

Toxicity Toxic to aquatic life.

Ecological information on ingredients.

2-PINENE

ORGANIC ROSEMARY VERBENONE OIL

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

Chronic aquatic toxicity

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

CAMPHOR

Toxicity	Not considered toxic to fish.
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Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: ~ 17 mg/l, Pimephales promelas (Fat-head Minnow) LC ₅₀ , 96 hour: 33.25 mg/l, Fish
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CAMPHENE

Acute aquatic toxicity

LE(C) ₅₀	0.1 < L(E)C ₅₀ ≤ 1
M factor (Acute)	1
Acute toxicity - fish	LC ₅₀ , 96 hours: 0.1-1 mg/l, Fish

Chronic aquatic toxicity

M factor (Chronic)	1
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LIMONENE

Toxicity	Very toxic to aquatic organisms.
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Acute aquatic toxicity

LE(C) ₅₀	0.1 < L(E)C ₅₀ ≤ 1
M factor (Acute)	1
Acute toxicity - fish	LC ₅₀ , 96 hours: 0.702 - 0.720 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 70 mg/l, Daphnia magna
Acute toxicity - aquatic plants	ErC ₅₀ , 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

DL-BORNEOL

ORGANIC ROSEMARY VERBENONE OIL

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

BETA PINENE

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

Chronic aquatic toxicity

M factor (Chronic) 1

PARA CYMENE

Toxicity Toxic to aquatic life.

Acute aquatic toxicity

Acute toxicity - fish LC₅₀, 96 hour: 48 ppm, Fish

Acute toxicity - aquatic invertebrates LC₅₀, 48 hour: 6500 µg/l, Daphnia magna

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

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

Acute toxicity - fish LC₅₀, 96 hours: 0.72 - 6.104 mg/l, Fish

Acute toxicity - aquatic invertebrates EC₅₀, 48 hour: 5.184 mg/kg, Daphnia magna

Acute toxicity - aquatic plants EC₅₀, 72 hour: 5.4 mg/l, Algae
Chronic, NOEC, 72 hour: 3.47 mg/l, Algae

Chronic aquatic toxicity

M factor (Chronic) 1

CARYOPHYLLENE

Toxicity May cause long lasting harmful effects to aquatic life.

TERPINEOL

Acute aquatic toxicity

Acute toxicity - fish No information available.

ORGANIC ROSEMARY VERBENONE OIL

ALPHA-TERPINENE

Acute aquatic toxicity

Acute toxicity - fish	LC ₅₀ , 96 hours: 1.48 mg/l, Pimephales promelas (Fat-head Minnow)
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hours: 1.85 mg/l, Daphnia magna

LINALOOL

Toxicity	Not considered toxic to fish.
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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

12.2. Persistence and degradability

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

Ecological information on ingredients.

2-PINENE

Persistence and degradability	The product is readily biodegradable.
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CAMPHOR

Persistence and degradability	Expected to be readily biodegradable.
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LIMONENE

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

DL-BORNEOL

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

PARA CYMENE

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

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

Persistence and degradability	The product is readily biodegradable.
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ORGANIC ROSEMARY VERBENONE OIL

Biodegradation - Degradation 72%: 28 day
OECD 301D

TERPINEOL

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

LINALOOL

Persistence and degradability The product is readily biodegradable.

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

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient No information available.

Ecological information on ingredients.

CAMPHOR

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 3.04

CAMPHENE

Bioaccumulative potential Potentially bioaccumulating.

Partition coefficient log Pow: 4.5

LIMONENE

Bioaccumulative potential BCF: 490 - 1460,

Partition coefficient log Pow: 4.59

PARA CYMENE

Bioaccumulative potential No data available on bioaccumulation.

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

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 3.7

CARYOPHYLLENE

Bioaccumulative potential Potentially bioaccumulating.

Partition coefficient log Pow: 6.23

TERPINEOL

ORGANIC ROSEMARY VERBENONE OIL

Bioaccumulative potential No data available on bioaccumulation.

LINALOOL

Bioaccumulative potential The product is not bioaccumulating.

Partition coefficient log Kow: 2.7

12.4. Mobility in soil

Mobility Insoluble in water.

Ecological information on ingredients.

2-PINENE

Mobility The product is insoluble in water.

CAMPHOR

Mobility The product is partly soluble in water and may spread in the aquatic environment.

CAMPHENE

Mobility The product is insoluble in water.

LIMONENE

Mobility The product is insoluble in water.

BETA PINENE

Mobility The product is insoluble in water.

PARA CYMENE

Mobility Not determined.

TERPINEOL

Mobility No information available.

LINALOOL

Mobility The product is insoluble in water.

12.5. Results of PBT and vPvB assessment

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

Ecological information on ingredients.

CAMPHOR

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

LIMONENE

ORGANIC ROSEMARY VERBENONE OIL

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.

TERPINEOL

Results of PBT and vPvB assessment Not applicable.

LINALOOL

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.

CAMPHOR

Other adverse effects No information available.

LIMONENE

Other adverse effects No information available.

PARA CYMENE

Other adverse effects No information available.

CARYOPHYLLENE

Other adverse effects The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

TERPINEOL

Other adverse effects No information available.

LINALOOL

Other adverse effects The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

General information Do not puncture or incinerate, even when empty. Waste is classified as hazardous waste.

ORGANIC ROSEMARY VERBENONE OIL

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

14.1. UN number

UN No. (ADR/RID)	1197
UN No. (IMDG)	1197
UN No. (ICAO)	1197
UN No. (ADN)	1197

14.2. UN proper shipping name

Proper shipping name (ADR/RID) EXTRACTS, LIQUID

Proper shipping name (IMDG) EXTRACTS, LIQUID

Proper shipping name (ICAO) EXTRACTS, LIQUID

Proper shipping name (ADN) EXTRACTS, LIQUID

14.3. Transport hazard class(es)

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

Transport labels



14.4. Packing group

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

14.5. Environmental hazards

Environmentally hazardous substance/marine pollutant



14.6. Special precautions for user

EmS F-E, S-D

ORGANIC ROSEMARY VERBENONE OIL

ADR transport category 3

Emergency Action Code •3YE

Hazard Identification Number 33
(ADR/RID)

Tunnel restriction code (D/E)

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

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code No information required.

SECTION 15: Regulatory information

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

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

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

Seveso Directive - Control of major accident hazards P5c E2

15.2. Chemical safety assessment

No chemical safety assessment has been carried out.

Inventories

EU - EINECS/ELINCS

All the ingredients are listed or exempt.

SECTION 16: Other information

ORGANIC ROSEMARY VERBENONE OIL

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

31/05/2023

Version number

2.000

Supersedes date

15/09/2021

SDS number

56196

ORGANIC ROSEMARY VERBENONE OIL

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.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H361 Suspected of damaging fertility or the unborn child.
H361d Suspected of damaging the unborn child.
H371 May cause damage to organs .
H371 May cause damage to organs (Lungs) if inhaled.
H371 May cause damage to organs if inhaled.
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.
H413 May cause long lasting harmful effects to aquatic life.

Signature

Jitendra Panchal

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



Exposure scenario Use in fuels (Industrial)

Identification

Product name	Pine Oil (Synthetic)
REACH registration number	01-2119553062-49-XXXX
CAS number	8000-41-7
EC number	232-268-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in fuels (Industrial)
Main sector	SU3 Industrial uses

Environment

Environmental release category	ERC7 Use of functional fluid at industrial site
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Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC16 Use of fuels
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details	Covers concentrations up to 100 %.
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Amounts used

Daily amount per site: 0.5 tonnes
Annual amount per site: 10 tonnes
Fraction of EU tonnage used in region: 100%

Use in fuels (Industrial)

Frequency and duration of use

Emission days: 20 days/year

Environmental factors not influenced by risk management measures

Dilution Receiving surface water flow: 18000 m³/day

Risk management measures

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day
Estimated substance removal from wastewater via domestic sewage treatment: 90.37%

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Municipal waste assumed to be used as fertiliser.

Waste treatment Dispose of waste in accordance with environmental legislation.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Concentration details Covers concentrations up to 100 %.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
Application duration: 4 hours

Human factors not influenced by risk management

Potentially exposed body parts PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC16 Use of fuels Palm of one hand. Covers skin contact area up to 240 cm².
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Setting Indoor.

Temperature Assumes use at not more than 20°C above ambient temperature, unless stated differently.

Ventilation rate Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC16 Use of fuels Provide extract ventilation to points where emissions occur. Local exhaust ventilation - efficiency of at least [%]: 90
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Provide extract ventilation to points where emissions occur. Local exhaust ventilation - efficiency of at least [%]: 95

Organisational measures to prevent/limit releases, dispersion and exposure

Use in fuels (Industrial)

Organisational measures

Assumes a good basic standard of occupational hygiene is implemented. Automate activity where possible.

Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.

PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities

Wear a full-face respirator conforming to EN136 with Type A filter or better.

Efficiency of at least 90%

4. Guidance to check compliance with the exposure scenario (Environment 1)

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

4. Guidance to check compliance with the exposure scenario (Health 1)

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.



Exposure scenario Use in fuels (Professional)

Identification

Product name	Pine Oil (Synthetic)
REACH registration number	01-2119553062-49-XXXX
CAS number	8000-41-7
EC number	232-268-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in fuels (Professional)
Main sector	SU22 Professional uses

Environment

Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
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Worker

Process category	PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities PROC16 Use of fuels
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2. Conditions of use affecting exposure (Industrial - Environment 1)

Product characteristics

Concentration details	Covers concentrations up to 100 %.
-----------------------	------------------------------------

Amounts used

Daily amount for wide dispersive uses: 0.0000055 tonnes
Fraction of EU tonnage used in region: 10%

Use in fuels (Professional)

Frequency and duration of use

Emission days: 365 days/year

Environmental factors not influenced by risk management measures

Dilution Receiving surface water flow: 18000 m³/day

Risk management measures

STP type Municipal STP.

STP details Assumed domestic sewage treatment plant flow: 2000 m³/day
Estimated substance removal from wastewater via domestic sewage treatment: 90.37%

Conditions and measures related to external treatment of waste for disposal

Sludge treatment Municipal waste assumed to be used as fertiliser.

Waste treatment Dispose of waste in accordance with environmental legislation.

2. Conditions of use affecting exposure (Workers - Health 1)

Product characteristics

Physical state Liquid

Concentration details Covers concentrations up to 100 %. Unless otherwise stated.

Frequency and duration of use

Covers daily exposures up to 8 hours (unless stated differently).
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
Bulk transfers
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
General exposures (closed systems)
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
Fuel additive.
Diluent
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
Equipment cleaning and maintenance
PROC16 Use of fuels
Application duration: 4 hours
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
Drum/batch transfers
Application duration: 1 hour

Human factors not influenced by risk management

Potentially exposed body parts PROC1 Chemical production or refinery in closed process without likelihood of exposure or processes with equivalent containment conditions PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition PROC16 Use of fuels Palm of one hand. Covers skin contact area up to 240 cm².
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions PROC4 Chemical production where opportunity for exposure arises Palm of both hands. Covers skin contact area up to 480 cm².

Other given operational conditions affecting workers exposure

Use in fuels (Professional)

Setting	Indoor/outdoor use.
Temperature	Assumes use at not more than 20°C above ambient temperature, unless stated differently.
Ventilation rate	Provide a good standard of general ventilation (not less than 3 to 5 air changes per hour).

Technical conditions and measures at process level (source) to prevent release

Technical protective measures	Automate activity where possible. PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities Equipment cleaning and maintenance Provide extract ventilation to points where emissions occur. Local exhaust ventilation - efficiency of at least [%]: 80 PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities Provide extract ventilation at the points where emissions occur. Local exhaust ventilation - efficiency of at least [%]: 90
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Organisational measures to prevent/limit releases, dispersion and exposure

Organisational measures	Assumes a good basic standard of occupational hygiene is implemented.
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Risk management measures

Wear suitable gloves (tested to EN374), coverall and eye protection.
PROC2 Chemical production or refinery in closed continuous process with occasional controlled exposure or processes with equivalent containment conditions
PROC3 Manufacture or formulation in the chemical industry in closed batch processes with occasional controlled exposure or processes with equivalent containment condition
PROC8a Transfer of substance or mixture (charging and discharging) at non-dedicated facilities
PROC8b Transfer of substance or mixture (charging and discharging) at dedicated facilities
Wear a respirator conforming to EN140 with Type A filter or better.
Efficiency of at least 90%

4. Guidance to check compliance with the exposure scenario (Environment 1)

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

4. Guidance to check compliance with the exposure scenario (Health 1)

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.



Exposure scenario Use in fuels (Consumer)

Identification

Product name	Pine Oil (Synthetic)
REACH registration number	01-2119553062-49-XXXX
CAS number	8000-41-7
EC number	232-268-1
Supplier	Univar Solutions UK Ltd Aquarius House 6 Mid Point Business Park Bradford BD3 7AY +44 1274 267300 +44 1274 267306 SDS.EMEA@univarsolutions.com

1. Title of exposure scenario

Main title	Use in fuels (Consumer)
Product category	PC13 Fuels.
Main sector	SU21 Consumer uses

Environment

Environmental release category	ERC9a Widespread use of functional fluid (indoor) ERC9b Widespread use of functional fluid (outdoor)
--------------------------------	---

2. Conditions of use affecting exposure (Non-industrial - Environment 1)

Amounts used

Daily amount for wide dispersive uses: 0.0000055 tonnes
Fraction of Regional tonnage used locally: 0.05%

Frequency and duration of use

Emission days: 365 days/year

Environmental factors not influenced by risk management measures

Dilution	Receiving surface water flow: 18000 m ³ /day
----------	---

Risk management measures

STP type	Municipal STP.
STP details	Assumed domestic sewage treatment plant flow: 2000 m ³ /day Removal efficiency fraction (offsite; STP): 90.37%

2. Conditions of use affecting exposure (Non-industrial - Health 1)

Use in fuels (Consumer)

Product characteristics

Concentration details Concentration of substance in product: 0.5%

Amounts used

Amount per use: 5000 g

Frequency and duration of use

Covers frequency up to 1 days/year, , .

Application duration: 2 hours

Human factors not influenced by risk management

Potentially exposed body parts Both hands.

Other given operational conditions affecting Non-industrial exposure

Temperature Assumes activities are at ambient temperature (unless stated differently).

Other given operational conditions affecting Non-industrial exposure

Exposure route Dermal

4. Guidance to check compliance with the exposure scenario (Environment 1)

Predicted exposures are not expected to exceed the applicable exposure limits (given in Section 8 of the SDS) when the operational conditions/risk management measures given in Section 2 are implemented.

4. Guidance to check compliance with the exposure scenario (Health 1)

Predicted exposures are not expected to exceed the DN(M)EL when the Risk Management Measures/Operational Conditions outlined in Section 2 are implemented.