

This safety data sheet was created pursuant to the requirements of:
UK REACH Regulations (SI 2019/758 as amended)

Supersedes date 28-Jan-2020***

Revision date 23-Dec-2024

Revision Number 3

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

1.1. Product identifier

Product Code(s)	59609***
Safety data sheet number	59609***
Product Name	ORGANIC PATCHOULI ESSENTIAL OIL MADAGASCAR
EC Number	282-493-4***
CAS No	8014-09-3***
Synonyms	PATCHOULI OIL ORGANIC MG***
Pure substance/mixture	Substance***

Contains AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENYL)-, (1S,4S,7R)-; CARYOPHYLLENE; PIN-2-(10) ENE; 2-PINENE

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

Recommended use	Cosmetics Food/Feed additive Fragrance***
-----------------	---

1.3. Details of the supplier of the safety data sheet

Supplier

Univar Solutions UK Ltd
Aquarius House
6 Mid Point Business Park
Bradford
GBR

For further information, please contact

E-mail address	SDS.EMEA@univarsolutions.com
Non-Emergency Telephone Number	+44 1274 267300 / +44 1274 267306

1.4. Emergency telephone number

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

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Skin sensitisation	Category 1*** - (H317)***
Chronic aquatic toxicity	Category 2*** - (H411)***

2.2. Label elements

Contains AZULENE, 1,2,3,4,5,6,7,8-OCTAHYDRO-1,4-DIMETHYL-7-(1-METHYLETHENYL)-, (1S,4S,7R)-; CARYOPHYLLENE; PIN-2-(10) ENE; 2-PINENE

**Signal word**

Danger***

Hazard statements

H304 - May be fatal if swallowed and enters airways

H317 - May cause an allergic skin reaction

H411 - Toxic to aquatic life with long lasting effects***

Precautionary statements

P264 - Wash face, hands and any exposed skin thoroughly after handling

P273 - Avoid release to the environment

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor

P331 - Do NOT induce vomiting

P391 - Collect spillage***

2.3. Other hazards

No information available.

SECTION 3: Composition/information on ingredients**3.1 Substances*****

Chemical name	Weight-%	EC No (EU Index No)	UK REACH registration number	Classification according to GB CLP (SI 2020/1567 as amended)	Specific concentration limit (SCL)	M-Factor	M-Factor (long-term)
[1R-(1A,4B,4AA,6B,8AA)]-OCTAHYDRO-4,8A,9,9-TETRAMETHYL-1,6-METHANO-1(2H)-NAPHTHOL*** 5986-55-0	20 - 30%	227-807-2***	-	Aquatic Chronic 2 (H411)***	-	-	-

(3S,3AS,5R)-3,8-DI METHYL-5-PROP-1 -EN-2-YL-1,2,3,3A,4 ,5,6,7-OCTAHYDR OAZULENE*** 3691-11-0	10 - 20%	-	-	-	-	-	-
AZULENE, 1,2,3,4,5,6,7,8-OCT AHYDRO-1,4-DIME THYL-7-(1-METHYL ETHENYL)-, (1S,4S,7R)-*** 3691-12-1	10 - 20%	641-402-1***	-	Asp. Tox. 1 (H304) Eye Irrit. 2 (H319) Skin Irrit. 2 (H315)***	-	-	-
[1R-(1A,3AB,4A,7B)]-1,2,3,3A,4,5,6,7-O CTAHYDRO-7-ISO PROPENYL-1,4-DI METHYLAZULENE* ** 22567-17-5	0 - 10%	245-084-1***	-	-	-	-	-
ALPHA-PATCHOUL ENE*** 560-32-7	0 - 10%	-	-	-	-	-	-
CARYOPHYLLENE *** 87-44-5	0 - 10%	201-746-1***	-	Skin Sens. 1B (H317) Asp. Tox. 1 (H304) Aquatic Chronic 4 (H413)***	-	-	-
ACIPHYLLENE*** 87745-31-1	0 - 10%	-	-	Eye Irrit. 2 (H319) Acute Tox. 4 (H302) Skin Irrit. 2 (H315) STOT SE 3 (H335)***	-	-	-
[1S-(1A,4A,7A)]-1,2, 3,4,5,6,7,8-OCTAH YDRO-1,4,9,9-TET RAMETHYL-4,7-ME THANOAZULENE*** 514-51-2	0 - 10%	208-182-5***	-	-	-	-	-
POGOSTOL*** 21698-41-9	0 - 10%	866-553-2***	-	Eye Irrit. 2 (H319) Skin Irrit. 2 (H315)***	-	-	-
GAMMA-PATCHOU LENE*** 508-55-4	0 - 10%	-	-	-	-	-	-
HUMULENE*** 6753-98-6	0 - 10%	229-816-7***	-	-	-	-	-
NORPATCHOULEN OL*** 41429-52-1	0 - 10%	-	-	-	-	-	-
POGOSTONE*** 23800-56-8	0 - 10%	-	-	-	-	-	-
CYCLOSEYCHELL ENE*** 52617-34-2	0 - 10%	-	-	-	-	-	-
[1AR-(1AA,4A,4AA, 7A,7AB,7BA)]-DEC AHYDRO-1,1,4,7-T ETRAMETHYL-1H- CYCLOPROP[E]AZ ULEN-4-OL***	0 - 10%	207-696-7***	-	-	-	-	-

489-41-8							
[1R-(1R*,4R*,6R*,10S*)]-4,12,12-TRIMETHYL-9-METHYLENE-5-OXATRICYCLO[8.2.0.0.4,6]DODECANE*** 1139-30-6	0 - 10%	214-519-7***	-	Aquatic Chronic 2 (H411)***	-	-	-
(3S,4AR,8AS)-8A-METHYL-5-METHYLIDENE-3-PROP-1-EN-2-YL-1,2,3,4,4A,6,7,8-OCTAHYDRO-NAPHTHALENE*** 17066-67-0	0 - 10%	-	-	-	-	-	-
CYCLOHEXANE, 1-ETHENYL-1-METHYL-2,4-BIS(1-METHYLETHENYL)-, (1S,2S,4R)-*** 515-13-9	0 - 10%	610-676-4***	-	-	-	-	-
[3R-(3A,3AB,5B,6B,7B,8AA)]-OCTAHYDRO-3,6,8,8-TETRAMETHYL-1H-3A,7-METHANOAZULEN-5-OL*** 13567-44-7	0 - 10%	236-974-0***	-	-	-	-	-
PIN-2-(10) ENE*** 127-91-3	0 - 10%	204-872-5***	-	Skin Irrit. 2 (H315) Skin Sens. 1B (H317) Asp. Tox. 1 (H304) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410) Flam. Liq. 3 (H226)***	-	-	-
ARISTOLENE*** 6831-16-9	0 - 10%	-	-	-	-	-	-
NOOTKATENE*** 5090-61-9	0 - 10%	-	-	-	-	-	-
DELTA-SELINENE** 28624-23-9	0 - 10%	-	-	-	-	-	-
ALPHA-PANASINS ENE*** 56633-28-4	0 - 10%	-	-	-	-	-	-
(R)-6-ISOPROPYL-4,8A-DIMETHYL-1,2,3,7,8,8A-HEXAHYDRO-NAPHTHALENE*** 28624-28-4	0 - 10%	-	-	-	-	-	-
NOOTKATOL ISOMER*** 50763-66-1	0 - 10%	-	-	-	-	-	-
8-ISOPROPYL-1,3-DIMETHYLTRICYCLO[4.4.0.0.2,7]DEC-3-ENE***	0 - 10%	223-364-4***	-	Asp. Tox. 1 (H304)***	-	-	-

3856-25-5							
DELTA-ELEMENE** * 20307-84-0	0 - 10%	-	-	-	-	-	-
2-PINENE*** 80-56-8	0 - 10%	201-291-9***	-	Asp. Tox. 1 (H304) Flam. Liq. 3 (H226) Skin Sens. 1 (H317) Aquatic Chronic 1 (H410) Acute Tox. 4 (H302) Skin Irrit. 2 (H315)***	-	-	-
INTERMEDEOL *** 6168-59-8	0 - 10%	-	-	-	-	-	-
3,7,11,15-TETRAM ETHYLHEXADEC-2 -EN-1-OL *** 150-86-7	0 - 10%	205-776-6***	-	Aquatic Chronic 1 (H410) Aquatic Acute 1 (H400) Skin Irrit. 2 (H315)***	-	-	-
(1AA,4AA,7A,7AB,7 BA)-(-)-1A,2,4A,5,6, 7,7A,7B-OCTAHYD RO-1,1,4,7-TETRA METHYL-1H-CYCL OPROP[E]AZULEN E*** 85048-01-7	0 - 10%	285-194-7***	-	-	-	-	-
ISOSPATHULENOL *** 88395-46-4	0 - 10%	-	-	-	-	-	-
NEOINTERMEDEO L *** 5945-72-2	0 - 10%	-	-	-	-	-	-
NAPHTHALENE, 1,2,3,4,4A,5,6,8A-O CTAHYDRO-4A,8-D IMETHYL-2-(1-MET HYLETHENYL)-, (2R,4AR,8AR)-*** 473-13-2	0 - 10%	610-333-9***	-	-	-	-	-
BETA-PANASINSE NE*** 56684-97-0	0 - 10%	-	-	-	-	-	-
2,6,10-TRIMETHYL DODECA-2,6,9,11- TETRAENE*** 502-61-4	0 - 10%	207-948-6***	-	Asp. Tox. 1 (H304)***	-	-	-
[1AR-(1AA,4AA,7A, 7AB,7BA)]-DECAH YDRO-1,1,7-TRIME THYL-4-METHYLE NE-1H-CYCLOPRO P[E]AZULENE*** 489-39-4	0 - 10%	207-694-6***	-	Asp. Tox. 1 (H304)***	-	-	-
(E)-5-ISOPROPYL- 8-METHYLNONA-6, 8-DIEN-2-ONE*** 54868-40-5	0 - 10%	-	-	-	-	-	-
(1R,4AS,8AR)-1,4A- DIMETHYL-7-(PRO	0 - 10%	-	-	Skin Sens. 1 (H317)***	-	-	-

P-1-EN-2-YL)-1,2,3,4,4A,5,6,8A-OCTAHYDRONAPHTHALENE*** 194607-93-7							
(-)-SPATHULENOL* ** 77171-55-2	0 - 10%	-	-	-	-	-	-
MUUROLA-4,10(14)-DIEN-1-OL*** -	0 - 10%	-	-	-	-	-	-
HUMULENE EPOXIDE II (-)*** 19888-34-7	0 - 10%	866-517-6***	-	Eye Irrit. 2 (H319) Skin Sens. 1B (H317)***	-	-	-
(E)-1-(2,6,6-TRIMETHYL-1-CYCLOHEXEN-1-YL)-2-BUTEN-1-ONE*** 639-99-6	0 - 10%	245-842-1***	-	Aquatic Chronic 2 (H411) Skin Irrit. 2 (H315) Skin Sens. 1B (H317)***	-	-	-
ALPHA-HIMACHALENE*** 3853-83-6	0 - 10%	-	-	-	-	-	-
(R)-P-MENTHA-1,8-DIENE*** 5989-27-5	0 - 10%	227-813-5 (601-096-00-2)***	-	Flam. Liq. 3 (H226) Asp. Tox. 1 (H304) Skin Irrit. 2 (H315) Skin Sens. 1B (H317) Aquatic Acute 1 (H400) Aquatic Chronic 1 (H410)***	-	1***	-
(E)-3,7,11-TRIMETHYLDODECA-1,6,10-TRIEN-3-OL*** 40716-66-3	0 - 10%	255-053-4***	-	Aquatic Chronic 2 (H411)***	-	-	-
OCTAN-3-ONE*** 106-68-3	0 - 10%	203-423-0***	-	Flam. Liq. 3 (H226) Skin Irrit. 2 (H315)***	-	-	-
OCTAN-3-OL*** 589-98-0	0 - 10%	209-667-4***	-	Eye Irrit. 2 (H319) Skin Irrit. 2 (H315)***	-	-	-
OCT-1-ENE-3-OL*** 3391-86-4	0 - 10%	222-226-0***	-	Acute Tox. 4 (H332) Eye Irrit. 2 (H319) Aquatic Acute 1 (H400) Acute Tox. 4 (H302) Skin Irrit. 2 (H315)***	-	-	-
LINALOOL*** 78-70-6	0 - 10%	201-134-4 (603-235-00-2)***	-	Skin Irrit. 2 (H315) Skin Sens. 1B (H317) Eye Irrit. 2 (H319) ***	-	-	-
DELTA-CADINENE* ** 483-76-1	0 - 10%	-	-	-	-	-	-
BICYCLOGERMACRENE*** 24703-35-3	0 - 10%	-	-	-	-	-	-
2-((3S,8S)-1,2,3,4,5,6,7,8-OCTAHYDRO-3,8-DIMETHYLAZULEN-5-YL)PROPAN-2-OL*** 489-86-1	0 - 10%	207-702-8***	-	-	-	-	-

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

This product does not contain candidate substances of very high concern at a concentration $\geq 0.1\%$ (UK REACH Article 59)

SECTION 4: First aid measures

4.1. Description of first aid measures

General advice	Show this safety data sheet to the doctor in attendance.***
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a doctor.
Skin contact	Wash with soap and water. May cause an allergic skin reaction. In the case of skin irritation or allergic reactions see a doctor.***
Ingestion	Rinse mouth.

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

Symptoms	Itching. Rashes. Hives.***
Dermal	Hives. May cause an allergic skin reaction. Prolonged contact may cause redness and irritation.***

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

Note to doctors	May cause sensitisation in susceptible persons. Treat symptomatically.***
-----------------	---

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable Extinguishing Media	Dry chemical, CO2, alcohol-resistant foam or water spray.***
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.

5.2. Special hazards arising from the substance or mixture

Specific hazards arising from the chemical	Product is or contains a sensitiser. May cause sensitisation by skin contact.***
Hazardous combustion products	Carbon oxides.***

5.3. Advice for firefighters

Special protective equipment and precautions for fire-fighters	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear. Use personal protection equipment.
--	--

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. Use personal protective equipment as required.***

For emergency responders Use personal protection recommended in Section 8.

6.2. Environmental precautions

Environmental precautions See Section 12 for additional Ecological Information.

6.3. Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Take up mechanically, placing in appropriate containers for disposal.

Prevention of secondary hazards Clean contaminated objects and areas thoroughly observing environmental regulations.

6.4. Reference to other sections

Reference to other sections See section 8 for more information. See section 13 for more information.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes or clothing. Ensure adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Take off contaminated clothing and wash it before reuse.***

General hygiene considerations Wash hands before breaks and immediately after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.***

7.3. Specific end use(s)

Specific use(s)
See section 1 for more information.

Risk Management Methods (RMM) The information required is contained in this Safety Data Sheet.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Exposure Limits This product, as supplied, does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Biological occupational exposure limits This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Derived No Effect Level (DNEL) - Workers ***

Chemical name	Oral	Dermal	Inhalation
2-PINENE*** 80-56-8		0.542 mg/kg bw/day [4] [6]***	3.8 mg/m ³ [4] [6]***
LINALOOL*** 78-70-6		15 mg/cm ² [5] [6]***	2.8 mg/m ³ [4] [6]***

[4] Systemic health effects.***

[5] Local health effects.***

[6] Long term.***

Derived No Effect Level (DNEL) - General Public ***

Chemical name	Oral	Dermal	Inhalation
2-PINENE*** 80-56-8	0.225 mg/kg bw/day [4] [6]***		0.674 mg/m ³ [4] [6]***
LINALOOL*** 78-70-6	0.2 mg/kg/day [4] [6]***	15 mg/cm ² [5] [6]***	0.7 mg/m ³ [4] [6]***

[4] Systemic health effects.***

[5] Local health effects.***

[6] Long term.***

Predicted No Effect Concentration (PNEC) ***

Chemical name	Freshwater	Freshwater (intermittent release)	Marine water	Marine water (intermittent release)	Air
2-PINENE*** 80-56-8	0.606 µg/L***	3.03 µg/L***	0.0606 µg/L***	0.303 µg/L***	
LINALOOL*** 78-70-6	0.2 mg/l***	2 mg/L***	0.02 mg/l***		

Chemical name	Freshwater sediment	Marine sediment	Sewage treatment	Soil	Food chain
2-PINENE*** 80-56-8	157 µg/kg sediment dw***	15.7 µg/kg sediment dw***	0.2 mg/L***	31.7 µg/kg soil dw***	8.76 mg/kg food***
LINALOOL*** 78-70-6	2.22 mg/kg***	0.222 mg/kg***	10 mg/L***	0.327 mg/kg***	> 10 mg/l***

8.2. Exposure controls**Engineering controls** No information available.**Personal protective equipment****Eye/face protection** Wear safety glasses with side shields (or goggles). Use eye protection according to EN 166.***

Hand protection	Ensure that the breakthrough time of the glove material is not exceeded. Refer to glove supplier for information on breakthrough time for specific gloves. Gloves must conform to standard EN 374.***
Skin and body protection	Wear suitable protective clothing.***
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid***
Appearance	Liquid***
Colour	brown To yellow***
Odour	Characteristic.***
Odour threshold	No information available

Property	Values	Remarks • Method
Melting point / freezing point		No information available.
Initial boiling point and boiling range		No information available.
Flammability		No information available.
Flammability Limit in Air		No information available.
Upper flammability or explosive limits		
Lower flammability or explosive limits		
Flash point	116*** °C***	***
Autoignition temperature		No information available.
Decomposition temperature		No information available.
pH		No information available.
pH (as aqueous solution)		No information available.
Kinematic viscosity		No information available.
Dynamic viscosity		No information available.
Water solubility	No data available	No information available.
Solubility(ies)		No information available.
Partition coefficient		No information available.
Vapour pressure		No information available.
Relative density	0.952 - 0.975***	***
Bulk density		No information available
Liquid Density	No information available	No information available
Relative vapour density		No information available.
Particle characteristics		No information available.
Particle Size	No information available	
Particle Size Distribution	No information available	
Explosive properties	Not considered to be explosive.***	
Oxidising properties	Does not meet the criteria for classification as oxidising***	

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity Stable under recommended storage conditions.***

10.2. Chemical stability

Stability Stable under normal conditions.

Explosion data

Sensitivity to mechanical impact None.

Sensitivity to static discharge None.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions None under normal processing.

10.4. Conditions to avoid

Conditions to avoid Excessive heat.***

10.5. Incompatible materials

Incompatible materials Strong oxidising agents.***

10.6. Hazardous decomposition products

Hazardous decomposition products Carbon oxides.***

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Information on likely routes of exposure

Product Information ***

Inhalation May cause irritation.***

Eye contact May cause temporary eye irritation.***

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

Ingestion Gastrointestinal discomfort.***

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms Itching. Rashes. Hives.***

Acute toxicity

Numerical measures of toxicity

Component Information ***

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
[1R-(1R*,4R*,6R*,10S*)]-4,12,12-TRIMETHYL-9-METHYLENE-5-OXATRICYCLO[8.2.0.0.4,6]DODECANE***	> 5 g/kg (Rat) ***	-	-

PIN-2-(10) ENE***	> 5000 mg/kg (Rat) ***	> 5000 mg/kg (Rabbit)***	-
2-PINENE***	= 3700 mg/kg (Rat) ***	> 5000 mg/kg (Rat)***	-
3,7,11,15-TETRAMETHYLHEX ADEC-2-EN-1-OL***	> 5 g/kg (Rat) ***	-	-
(R)-P-MENTHA-1,8-DIENE***	= 4400 mg/kg (Rat) ***	> 5000 mg/kg (Rabbit) ***	> 3.41 mg/l (Mouse) 4h***
OCTAN-3-ONE***	> 5 g/kg (Rat) ***	> 5 g/kg (Rabbit)***	-
OCTAN-3-OL ***	> 5 g/kg (Rat) ***	> 5000 mg/kg (Rabbit)***	-
OCT-1-ENE-3-OL***	= 340 mg/kg (Rat) ***	-	-
LINALOOL ***	= 2790 mg/kg (Rat) ***	= 5610 mg/kg (Rabbit)***	-

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Skin corrosion/irritation** No information available.

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

Method	Species	Exposure route	Effective dose	Exposure time	Results
	Rabbit***	Dermal***			Irritant***

Serious eye damage/eye irritation No information available.

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

Method	Species	Exposure route	Effective dose	Exposure time	Results
	Rabbit***	eye***			May cause slight eye irritation***

Respiratory or skin sensitisation May cause an allergic skin reaction.***

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

Method	Species	Exposure route	Results
	Mouse***	Dermal***	Sensitising***

Germ cell mutagenicity No information available.

Component Information

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

Method	Species	Results
	in vitro***	Negative***
	in vivo***	Negative***

Carcinogenicity No information available.

Component Information

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

Method	Species	Results
	Rat***	Limited evidence of a carcinogenic

		effect***
--	--	-----------

Reproductive toxicity No information available.

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

Method	Species	Results
	Rat***	Negative NOAEL 750 mg/kg/day***
		Negative NOAEL 591 mg/kg/day***

STOT - single exposure No information available.

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

Method	Species	Exposure route	Effective dose	Exposure time	Results
	Rat***	Oral***	75 mg/kg***	103 weeks***	Negative***
	Mouse***	Oral***	1000 mg/kg***	103 weeks***	Not classified***
	Rat***	Oral***	600 mg/kg***	103 weeks***	Not classified***

STOT - repeated exposure No information available.

Component Information

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

Method	Species	Exposure route	Effective dose	Exposure time	Results
	similar health hazards***	Inhalation***			Some positive data exist, but the data are not sufficient for classification***
		Oral***			Not classified***

Aspiration hazard No information available.

Other adverse effects No information available.

SECTION 12: Ecological information

12.1. Toxicity

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

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

Method	Species	Endpoint type	Effective dose	Exposure time	Results
	Pimephales promelas***	LC50***	0.720 mg/L***	96 hours***	
	Green Algae***	ErC50***	0.32 mg/L***	72 hours***	
	Water flea***	EC50***	0.307 mg/L***	48 hours***	
	Fish***	EC10***	0.302 mg/L***	8 days***	
	Green Algae***	ErC10***	0.174 mg/L***	72 hours***	
	Water flea***	NOEC***	0.153 mg/L***	21 days***	

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
---------------	----------------------	------	----------------------------	-----------

2-PINENE***	-	LC50: =0.28mg/L (96h, Pimephales promelas)***	-	LC50: =41mg/L (48h, Daphnia magna)***
(R)-P-MENTHA-1,8-DIENE***	-	LC50: 0.619 - 0.796mg/L (96h, Pimephales promelas) LC50: =35mg/L (96h, Oncorhynchus mykiss)***	-	-
OCTAN-3-OL***	EC50: =2.7mg/L (96h, Pseudokirchneriella subcapitata)***	LC50: 4.78 - 8.85mg/L (96h, Oncorhynchus mykiss) LC50: 3.6 - 5.1mg/L (96h, Lepomis macrochirus)***	-	EC50: =3mg/L (48h, Daphnia magna) EC50: =320mg/L (48h, Daphnia magna) EC50: =8.5mg/L (48h, Daphnia magna) EC50: 4.78 - 8.87mg/L (48h, Daphnia magna)***
LINALOOL***	EC50: =88.3mg/L (96h, Desmodemus subspicatus)***	LC50: =27.8mg/L (96h, Oncorhynchus mykiss)***	-	EC50: =20mg/L (48h, Daphnia magna)***

12.2. Persistence and degradability

Persistence and degradability No information available.***

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

Method	Exposure time	Value	Results
OECD Test No. 301C: Ready Biodegradability: Modified MITI Test (I) (TG 301 C)***	14 days***	98% Biodegradation***	Readily biodegradable***
OECD Test No. 301A: Ready Biodegradability: DOC Die-Away Test (TG 301 A)***	14 days***	>93.8% Biodegradation***	Readily biodegradable***

12.3. Bioaccumulative potential

Bioaccumulation No information available.***

Component Information

Chemical name	Partition coefficient
[1R-(1A,4B,4AA,6B,8AA)]-OCTAHYDRO-4,8A,9,9-TETRAMETHYL-1,6-METHANO-1(2H)-NAPHTHOL***	5.5***
CARYOPHYLLENE***	6.23***
2-PINENE***	4.1***
(R)-P-MENTHA-1,8-DIENE***	4.57***
OCTAN-3-ONE***	2.9***
OCTAN-3-OL***	2.73***
OCT-1-ENE-3-OL***	2.5***
LINALOOL***	2.9***

12.4. Mobility in soil

Mobility in soil No information available.

12.5. Results of PBT and vPvB assessment

PBT and vPvB assessment The product does not contain any substance(s) classified as PBT or vPvB.

Chemical name	PBT and vPvB assessment
CARYOPHYLLENE***	PBT assessment does not apply***

PIN-2-(10) ENE***	The substance is not PBT / vPvB***
2-PINENE***	The substance is not PBT / vPvB***
3,7,11,15-TETRAMETHYLHEXADEC-2-EN-1-OL***	The substance is not PBT / vPvB***
(R)-P-MENTHA-1,8-DIENE***	No information available The substance is not PBT / vPvB***
LINALOOL***	The substance is not PBT / vPvB***

12.6. Other adverse effects

No information available.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste from residues/unused products	Dispose of in accordance with local regulations. Dispose of waste in accordance with environmental legislation.
Contaminated packaging	Do not reuse empty containers.

SECTION 14: Transport information

IATA

14.1 UN number or ID number	UN3082***
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. ([1R-(1A,4B,4AA,6B,8AA)]-OCTAHYDRO-4,8A,9,9-TETRAMETHYL-1,6-METHANO-1(2H)-NAPHTHOL, PIN-2-(10) ENE)***
14.3 Transport hazard class(es)	9***
14.4 Packing group	III***
14.5 Environmental hazards	Yes***
14.6 Special precautions for user	
Special Provisions	A97, A158, A197***
ERG Code	9L***

IMDG

14.1 UN number or ID number	UN3082***
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. ([1R-(1A,4B,4AA,6B,8AA)]-OCTAHYDRO-4,8A,9,9-TETRAMETHYL-1,6-METHANO-1(2H)-NAPHTHOL, PIN-2-(10) ENE)***
14.3 Transport hazard class(es)	9***
14.4 Packing group	III***
14.5 Environmental hazards	Yes***
14.6 Special precautions for user	
Special Provisions	274, 335, 969***
EmS-No	F-A, S-F***
14.7 Maritime transport in bulk according to IMO instruments	No information available

RID

14.1 UN number or ID number	UN3082***
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. ([1R-(1A,4B,4AA,6B,8AA)]-OCTAHYDRO-4,8A,9,9-TETRAMETHYL-1,6-METHANO-1(2H)-NAPHTHOL, PIN-2-(10) ENE)***
14.3 Transport hazard class(es)	9***
14.4 Packing group	III***
14.5 Environmental hazards	Yes***

14.6 Special precautions for user

Special Provisions 274, 335, 375, 601***
Classification code M6***

ADR

14.1 UN number or ID number UN3082***

14.2 UN proper shipping name ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S.
([1R-(1A,4B,4AA,6B,8AA)]-OCTAHYDRO-4,8A,9,9-TETRAMETHYL-1,6-METHANO-1(2H)-
NAPHTHOL, PIN-2-(10) ENE)***

14.3 Transport hazard class(es) 9***

14.4 Packing group III***

14.5 Environmental hazards Yes***

14.6 Special precautions for user

Special Provisions 274, 335, 601, 375***
Classification code M6***
Tunnel restriction code (-)***

SECTION 15: Regulatory information**15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****National regulations** *****Authorisations and/or restrictions on use:**

This product contains one or more substances subject to restriction (UK REACH - Annex XVII).
This product does not contain substances subject to authorisation (UK REACH - Annex XIV).***

Persistent Organic Pollutants

Not applicable

Export Notification requirements

Not applicable

Dangerous substance category per COMAH Regulations 2015 (as amended)

E2 - Hazardous to the Aquatic Environment in Category Chronic 2***

Named dangerous substances per COMAH Regulations 2015 (as amended)

Not applicable

The Ozone-Depleting Substances Regulations 2015

Not applicable

The Biocidal Products Regulations 2001 (as amended)

Not applicable

Chemical name	The Biocidal Products Regulations 2001 (as amended)
OCT-1-ENE-3-OL*** - 3391-86-4	Simplified procedure - Category A***

The Water Environment (Water Framework Directive) (England and Wales) Regulations 2017 (as amended)

Not applicable

Poisons Act 1972 (Explosive Precursors) Regulations (as Amended)

Not applicable

International Inventories**TSCA**

Contact supplier for inventory compliance status

DSL/NDSL

Contact supplier for inventory compliance status

EINECS/ELINCS

Contact supplier for inventory compliance status

ENCS	Contact supplier for inventory compliance status
IECSC	Contact supplier for inventory compliance status
KECI	Contact supplier for inventory compliance status
PICCS	Contact supplier for inventory compliance status
AIIC	Contact supplier for inventory compliance status
NZIoC	Contact supplier for inventory compliance status

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List
EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances
ENCS - Japan Existing and New Chemical Substances
IECSC - China Inventory of Existing Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
AIIC - Australian Inventory of Industrial Chemicals
NZIoC - New Zealand Inventory of Chemicals

15.2. Chemical safety assessment

Chemical Safety Report No information available

SECTION 16: Other information**Key or legend to abbreviations and acronyms used in the safety data sheet****Full text of H-Statements referred to under section 3**

H226 - Flammable liquid and vapour
 H302 - Harmful if swallowed
 H304 - May be fatal if swallowed and enters airways
 H315 - Causes skin irritation
 H317 - May cause an allergic skin reaction
 H400 - Very toxic to aquatic life
 H410 - Very toxic to aquatic life with long lasting effects
 H413 - May cause long lasting harmful effects to aquatic life***

Legend

SVHC: Substances of Very High Concern for Authorisation:

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation
+	Sensitisers		

Revision Note ***Indicates updated data since last publication

Classification procedure

Classification according to Regulation (EC) No. 1272/2008 [CLP]	Method Used
Acute oral toxicity***	Calculation method***
Acute dermal toxicity***	Calculation method***
Acute inhalation toxicity - gas***	Calculation method***
Acute inhalation toxicity - vapour***	Calculation method***
Acute inhalation toxicity - dust/mist***	Calculation method***
Skin corrosion/irritation***	Calculation method***
Serious eye damage/eye irritation***	Calculation method***
Respiratory sensitisation***	Calculation method***
Skin sensitisation***	Calculation method***
Mutagenicity***	Calculation method***
Carcinogenicity***	Calculation method***

Reproductive toxicity***
STOT - single exposure***
STOT - repeated exposure***
Acute aquatic toxicity***
Chronic aquatic toxicity***
Aspiration hazard***
Ozone***

Calculation method***
Calculation method***
Calculation method***
Calculation method***
Calculation method***
Calculation method***
Calculation method***

Key literature references and sources for data used to compile the SDS

Agency for Toxic Substances and Disease Registry (ATSDR)
U.S. Environmental Protection Agency ChemView Database
European Food Safety Authority (EFSA)
European Chemicals Agency (ECHA) Committee for Risk Assessment (ECHA_RAC)
European Chemicals Agency (ECHA) (ECHA_API)
Environmental Protection Agency
Acute Exposure Guideline Level(s) (AEGL(s))
U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
U.S. Environmental Protection Agency High Production Volume Chemicals
Food Research Journal
Hazardous Substance Database
International Uniform Chemical Information Database (IUCLID)
National Institute of Technology and Evaluation (NITE)
Australian National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NIOSH (National Institute for Occupational Safety and Health)
National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
U.S. National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organisation for Economic Co-operation and Development Environment, Health, and Safety Publications
Organisation for Economic Co-operation and Development High Production Volume Chemicals Programme
Organisation for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Prepared By Jitendra Panchal***

Supersedes date 28-Jan-2020***

Revision date 23-Dec-2024

**This material safety data sheet complies with the requirements of UK REACH Regulations (SI 2019/758 as amended)
Take note of Directive 98/24/EC on the protection of the health and safety of workers from the risks related to chemical agents at work**

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The 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, unless specified in the text.

End of Safety Data Sheet