



SAFETY DATA SHEET MANDARIN OIL RED

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

1.1. Product identifier

Product name	MANDARIN OIL RED
Product number	55693
REACH registration number	01-2120074120-72-XXXX
CAS number	8008-31-9
EC number	284-521-0

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

Identified uses	Cosmetics Flavouring Fragrance
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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.	55693

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

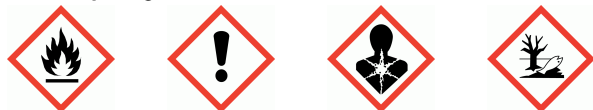
Classification (EC 1272/2008)

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

2.2. Label elements

EC number	284-521-0
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Hazard pictograms



Signal word

Danger

MANDARIN OIL RED

Hazard statements	H226 Flammable liquid and vapour. H315 Causes skin irritation. H317 May cause an allergic skin reaction. H304 May be fatal if swallowed and enters airways. H411 Toxic to aquatic life with long lasting effects.
Precautionary statements	P202 Do not handle until all safety precautions have been read and understood. P261 Avoid breathing vapour/ spray. P273 Avoid release to the environment. P302+P352 IF ON SKIN: Wash with plenty of water. P501 Dispose of contents/ container in accordance with national regulations.
Contains	LIMONENE, P-MENTHA-1,4-DIENE, 2-PINENE, MYRCENE, PIN-2-(10) ENE, p-MENTHA-1,4(8)-DIENE, 5-ISOPROPYL-2-METHYLBICYCLO[3.1.0]HEX-2-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

LIMONENE		60-100%
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		
P-MENTHA-1,4-DIENE		10-30%
CAS number: 99-85-4	EC number: 202-794-6	
Classification Flam. Liq. 3 - H226 Repr. 2 - H361d Asp. Tox. 1 - H304		

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2-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 Acute Tox. 4 - H302 Skin Irrit. 2 - H315 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			

PIN-2-(10) ENE			1-5%
CAS number: 127-91-3	EC number: 204-872-5		
M factor (Acute) = 1	M factor (Chronic) = 1		
Classification Flam. Liq. 3 - H226 Skin Irrit. 2 - H315 Skin Sens. 1B - H317 Asp. Tox. 1 - H304 Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410			

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

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5-ISOPROPYL-2-METHYLBICYCLO[3.1.0]HEX-2-ENE		<1%
CAS number: 2867-05-2	EC number: 220-686-7	
Classification Flam. Liq. 3 - H226 Skin Sens. 1 - H317		
PARA CYMENE		<1%
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		

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

Product name	MANDARIN OIL RED
REACH registration number	01-2120074120-72-XXXX
CAS number	8008-31-9
EC number	284-521-0
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

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

Storage precautions Store in tightly-closed, original container in a dry, cool and well-ventilated place. Avoid exposure to high temperatures or direct sunlight. Store at temperatures between 0°C and 25°C.

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.

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SECTION 8: Exposure controls/Personal protection

8.1. Control parameters

LIMONENE (CAS: 138-86-3)

Ingredient comments	No exposure limits known for ingredient(s).
DNEL	Workers - Dermal; Short term : 222 µg/cm ² Workers - Inhalation; Long term : 33.3 mg/m ³ General population - Dermal; Short term : 111 µg/cm ² General population - Inhalation; Long term : 8.33 mg/m ³ 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

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

DNEL	Workers - Inhalation; Long term systemic effects: 5.12 mg/m ³ Workers - Dermal; Long term systemic effects: 1.45 mg/kg/day Consumer - Inhalation; Long term systemic effects: 1.26 mg/m ³ 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

METHYL-2-AMINO BENZOATE (CAS: 134-20-3)

DNEL	Workers - Inhalation; Long term systemic effects: 5.28 mg/m ³ Workers - Dermal; Long term systemic effects: 1.5 mg/kg/day General population - Inhalation; Long term systemic effects: 1.3 mg/m ³ General population - Oral; Long term systemic effects: 0.75 mg/kg/day General population - Dermal; Long term systemic effects: 0.75 mg/kg/day
PNEC	Fresh water; 0.009 mg/l marine water; 0.001 mg/l

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/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

OCTANAL (CAS: 124-13-0)

DNEL

Workers - Inhalation; Long term systemic effects: 1.3 mg/m³
 Workers - Dermal; Long term systemic effects: 0.37 mg/kg/day
 Consumer - Inhalation; Long term systemic effects: 0.32 mg/m³
 Consumer - Dermal; Long term systemic effects: 0.19 mg/kg/day
 Consumer - Oral; Long term systemic effects: 0.19 mg/kg/day

PNEC

Fresh water; 0.00154 mg/l
 marine water; 0.000154 mg/l
 STP; 3.16 mg/l

DECANAL (CAS: 112-31-2)

DNEL

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

PNEC

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

8.2. Exposure controls

Protective equipment



Eye/face protection

Eyewear complying with an approved standard should be worn if a risk assessment indicates eye contact is possible. Tight-fitting safety glasses. Personal protective equipment for eye and face protection should comply with European Standard EN166.

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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. 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	Red.
Odour	Characteristic.
Odour threshold	No information available.
pH	No information available.
Melting point	No information available.
Initial boiling point and range	178°C @ 760 mm Hg
Flash point	49°C
Evaporation rate	< 1
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	0.95 mm Hg @ 25°C
Vapour density	No information available.
Relative density	0.84 - 0.87 @ 25°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.

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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 No information available.

Particle size No information available.

Molecular weight 136.23

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.

10.2. Chemical stability

Stability Stable at normal ambient temperatures and when used as recommended.

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 Oxidising agents. Acids. Alkalis.

10.6. Hazardous decomposition products

Hazardous decomposition products Oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity - oral

ATE oral (mg/kg) 22,727.27

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.

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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 May be fatal if swallowed and enters airways.

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

Ingestion May be fatal if swallowed and enters airways.

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

Eye contact May cause temporary eye irritation.

Toxicological information on ingredients.

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

STOT - single exposure No information available.

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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.

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

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

PIN-2-(10) ENE

Acute toxicity - oral

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

Species Rat

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

ATE oral (mg/kg) 5,000.0

Acute toxicity - dermal

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

Species Rabbit

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

ATE dermal (mg/kg) 5,000.0

Aspiration hazard

Aspiration hazard May be fatal if swallowed and enters airways. Entry into the lungs following ingestion or vomiting may cause chemical pneumonitis.

Inhalation Irritating to respiratory system.

Ingestion Gastrointestinal symptoms, including upset stomach.

Skin contact Irritating to skin.

Eye contact Irritating to eyes.

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.

PARA CYMENE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 3,669.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 3669 mg/kg, Oral, Rat

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ATE oral (mg/kg) 3,669.0

Acute toxicity - inhalation

ATE inhalation (vapours mg/l) 3.0

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.

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.

METHYL-2-AMINO BENZOATE

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 2,910.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 2910 mg/kg, Oral, Rat

ATE oral (mg/kg) 2,910.0

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

1-METHYL 4-ISO PROPYL-1-CYCLOHEXEN-8-OL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 4,300.0

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Species	Rat
Notes (oral LD₅₀)	LD ₅₀ 4300 mg/kg, Oral, Rat
ATE oral (mg/kg)	4,300.0
<u>Acute toxicity - dermal</u>	
Notes (dermal LD₅₀)	LD ₅₀ > 3000 mg/kg, Dermal, Rabbit
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Irritating to skin. Rabbit
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Irritating to eyes. Rabbit
<u>Skin sensitisation</u>	
Skin sensitisation	Guinea pig maximization test (GPMT) - Guinea pig: Not sensitising.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Bacterial reverse mutation test: Negative.
<u>Specific target organ toxicity - repeated exposure</u>	
STOT - repeated exposure	NOAEL 314 mg/kg, Oral, Rat (90 days ; 7 days/week)

LINALOOL

<u>Acute toxicity - oral</u>	
Acute toxicity oral (LD₅₀ mg/kg)	2,790.0
Species	Rat
Notes (oral LD₅₀)	LD ₅₀ 2790 mg/kg, Oral, Rat
<u>Acute toxicity - dermal</u>	
Acute toxicity dermal (LD₅₀ mg/kg)	5,610.0
Species	Rabbit
Notes (dermal LD₅₀)	LD ₅₀ 5610 mg/kg, Dermal, Rabbit
<u>Skin corrosion/irritation</u>	
Skin corrosion/irritation	Irritating to skin. Rabbit
<u>Serious eye damage/irritation</u>	
Serious eye damage/irritation	Slightly irritating. Rabbit
<u>Skin sensitisation</u>	
Skin sensitisation	May cause an allergic skin reaction. - Rabbit: Sensitising.
<u>Germ cell mutagenicity</u>	
Genotoxicity - in vitro	Bacterial reverse mutation test: Negative.
<u>Carcinogenicity</u>	

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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.

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

Eye contact Causes eye irritation.

OCTANAL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 4,617.0

Species Rat

Notes (oral LD₅₀) LD₅₀ 4617 mg/kg, Oral, Rat

ATE oral (mg/kg) 4,617.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,207.0

Species Rabbit

Notes (dermal LD₅₀) LD₅₀ 5207 mg/kg, Dermal, Rabbit

ATE dermal (mg/kg) 5,207.0

Skin corrosion/irritation

Skin corrosion/irritation Causes skin irritation.

Serious eye damage/irritation

Serious eye damage/irritation No information available.

MANDARIN OIL RED

Respiratory sensitisation

Respiratory sensitisation No information available.

Skin sensitisation

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

Germ cell mutagenicity

Genotoxicity - in vitro Bacterial reverse mutation test: Negative., OECD 471
Gene mutation: Negative., OECD 476

Carcinogenicity

Carcinogenicity No information available.

Reproductive toxicity

Reproductive toxicity - fertility Fertility - Dose level: (3d/w) 300 mg/kg, Oral, Rat, Female Negative.

Reproductive toxicity - development Maternal toxicity:, Developmental toxicity: - Dose level:: (3d/w) 300 mg/kg, Oral, Rat, Female, Negative. Teratogenicity: - Dose level:: (9d) 1500 mg/kg, Oral, Rat, Female, Negative.

Specific target organ toxicity - single exposure

STOT - single exposure No information available.

Specific target organ toxicity - repeated exposure

STOT - repeated exposure NOAEL > 37 mg/kg, Oral, Rat

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 Causes skin irritation. May cause an allergic skin reaction.

Eye contact Causes serious eye irritation.

DECANAL

Acute toxicity - oral

Acute toxicity oral (LD₅₀ mg/kg) 33,320.0

Species Rat

ATE oral (mg/kg) 33,320.0

Acute toxicity - dermal

Acute toxicity dermal (LD₅₀ mg/kg) 5,040.0

Species Rabbit

ATE dermal (mg/kg) 5,040.0

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Skin corrosion/irritation

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

Serious eye damage/irritation

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

Respiratory sensitisation

Respiratory sensitisation Not sensitising.

Skin sensitisation

Skin sensitisation - Human: Not sensitising.

Germ cell mutagenicity

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

Reproductive toxicity

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

Specific target organ toxicity - repeated exposure

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

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.

(1S,2S,4R)-(+)-LIMONENE-1,2-DIOL

Acute toxicity - oral

ATE oral (mg/kg) 500.0

SECTION 12: Ecological information

Ecotoxicity Toxic to aquatic life with long lasting effects.

Ecological information on ingredients.

LIMONENE

Ecotoxicity Very toxic to aquatic life with long lasting effects.

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.

PIN-2-(10) ENE

Ecotoxicity Very toxic to aquatic life with long lasting effects.

PARA CYMENE

MANDARIN OIL RED

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.

OCTANAL

Ecotoxicity Toxic to aquatic life with long lasting effects.

12.1. Toxicity

Toxicity Toxic to aquatic life.

Ecological information on ingredients.

LIMONENE

Toxicity Very toxic to aquatic organisms.

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

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

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

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

Chronic aquatic toxicity

M factor (Chronic) 1

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

2-PINENE

Acute aquatic toxicity

LE(C)₅₀ 0.1 < L(E)C₅₀ ≤ 1

M factor (Acute) 1

Acute toxicity - aquatic invertebrates LC₅₀, 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

PIN-2-(10) ENE

Acute aquatic toxicity

MANDARIN OIL RED

LE(C) ₅₀	0.1 < L(E)C ₅₀ ≤ 1
M factor (Acute)	1
Acute toxicity - aquatic invertebrates	LC ₅₀ , 48 hour: 2.2 mg/l, Daphnia magna
<u>Chronic aquatic toxicity</u>	
M factor (Chronic)	1

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

<u>Acute aquatic toxicity</u>	
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
<u>Chronic aquatic toxicity</u>	
M factor (Chronic)	1

PARA CYMENE

Toxicity	Toxic to aquatic life.
<u>Acute aquatic toxicity</u>	
Acute toxicity - fish	LC ₅₀ , 96 hour: 48 ppm, Fish
Acute toxicity - aquatic invertebrates	LC ₅₀ , 48 hour: 6500 µg/l, Daphnia magna

ALPHA-TERPINENE

<u>Acute aquatic toxicity</u>	
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

METHYL-2-AMINO BENZOATE

<u>Acute aquatic toxicity</u>	
Acute toxicity - fish	LC ₅₀ , 96 hour: 22.9 mg/l, Fish
Acute toxicity - aquatic invertebrates	LC ₅₀ , 48 hour: 18.2 mg/l, Daphnia magna

1-METHYL 4-ISO PROPYL-1-CYCLOHEXEN-8-OL

<u>Acute aquatic toxicity</u>	
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MANDARIN OIL RED

Acute toxicity - fish	LC ₅₀ , 96 hour: 70 mg/l, Fish OECD 203
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hour: 73 mg/l, Daphnia magna OECD 202
Acute toxicity - aquatic plants	EC ₅₀ , 72 hour: 68 mg/l, Algae OECD 201 Chronic, NOEC, 72 hour: 3.9 mg/l, Algae OECD 201

LINALOOL

Toxicity	Not considered toxic to fish.
<u>Acute aquatic toxicity</u>	
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

OCTANAL

Toxicity	Toxic to aquatic life.
<u>Acute aquatic toxicity</u>	
Acute toxicity - aquatic invertebrates	EC ₅₀ , 48 hour: 1.54 mg/l, Daphnia magna OECD 202
Acute toxicity - aquatic plants	EC ₅₀ , 72 hour: 2.9 mg/l, Algae OECD 201

DECANAL

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

12.2. Persistence and degradability

Persistence and degradability The substance is readily biodegradable.

Ecological information on ingredients.

LIMONENE

MANDARIN OIL RED

Persistence and degradability

The product is not expected to be biodegradable.

2-PINENE**Persistence and degradability**

The product is readily biodegradable.

PIN-2-(10) ENE**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

PARA CYMENE**Persistence and degradability**

There are no data on the degradability of this product.

1-METHYL 4-ISO PROPYL-1-CYCLOHEXEN-8-OL**Persistence and degradability**

The product is readily biodegradable.

Biodegradation

- Degradation 80%: 28 day

LINALOOL**Persistence and degradability**

The product is readily biodegradable.

Biodegradation

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

OCTANAL**Persistence and degradability**

Inherently biodegradable.

Biodegradation

- Degradation 77%: 28 day
OECD 302C
- Degradation 46%: 28 day
OECD 310

DECANAL**Biodegradation**

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

MANDARIN OIL RED

12.3. Bioaccumulative potential

Bioaccumulative potential No data available on bioaccumulation.

Partition coefficient No information available.

Ecological information on ingredients.

LIMONENE

Bioaccumulative potential BCF: 490 - 1460,

Partition coefficient log Pow: 4.59

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

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 3.7

PARA CYMENE

Bioaccumulative potential No data available on bioaccumulation.

METHYL-2-AMINO BENZOATE

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 1.9

1-METHYL 4-ISO PROPYL-1-CYCLOHEXEN-8-OL

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 2.67

LINALOOL

Bioaccumulative potential The product is not bioaccumulating.

Partition coefficient log Kow: 2.7

OCTANAL

Bioaccumulative potential Bioaccumulation is unlikely.

Partition coefficient log Pow: 3.05

DECANAL

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

Partition coefficient log Pow: 3.8

12.4. Mobility in soil

Mobility Insoluble in water.

Ecological information on ingredients.

LIMONENE

MANDARIN OIL RED

Mobility The product is insoluble in water.

2-PINENE

Mobility The product is insoluble in water.

PIN-2-(10) ENE

Mobility The product is insoluble in water.

PARA CYMENE

Mobility Not determined.

LINALOOL

Mobility The product is insoluble in water.

OCTANAL

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.

LIMONENE

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.

LINALOOL

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

OCTANAL

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.

LIMONENE

Other adverse effects No information available.

MANDARIN OIL RED

PARA CYMENE

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.

OCTANAL

Other adverse effects None known.

DECANAL

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. 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 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

MANDARIN OIL RED

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

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.

MANDARIN OIL RED

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 P5c E1
major accident hazards

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

MANDARIN OIL RED

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

30/05/2023

Version number

4.000

Supersedes date

27/08/2021

SDS number

55693

MANDARIN OIL RED

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. H319 Causes serious eye irritation. H361 Suspected of damaging fertility or the unborn child. H361d Suspected of damaging the unborn child. H400 Very toxic to aquatic life. H410 Very toxic to aquatic life with long lasting effects. H411 Toxic to aquatic life with long lasting effects.
Signature	Jitendra Panchal

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