



PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (EUCALYPTUS CITRIODORA)

NOW Health Group

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Version No: 3.1.1.1

Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

S.GHS.U.SA.EN

SECTION 1 IDENTIFICATION

Product Identifier

Product name	PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (EUCALYPTUS CITRIODORA)
Chemical Name	eucalyptus citriodora oil
Synonyms	Citriodiol, Extract of Lemon Eucalyptus, OLE, PMD and related oil of lemon eucalyptus compounds, PMD-rich botanic oil, PMDRBO, blue spotted gum oil, corymbia citriodora oil, eucalyptus citriodorus oil, lemon eucalyptus oil., lemon-scented gum oil, oil of lemon eucalyptus, refined grades include:, spotted gum oil (eucalyptus citriodora)
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (contains citronellal)
Other means of identification	Not Available
CAS number	129828-24-6

Recommended use of the chemical and restrictions on use

Relevant identified uses	<p>Essential oils are used in perfumes, cosmetics, soaps and other products, for flavouring food and drink, and for adding scents to incense and household cleaning products.</p> <p>Essential oils have been used medicinally in history. Medical applications proposed by those who sell medicinal oils range from skin treatments to remedies for cancer and often are based solely on historical accounts of use of essential oils for these purposes.</p> <p>Essential oils are generally extracted, from plant parts by distillation, often by using steam.</p> <p>In perfumery/ flavouring.</p> <p>While unrefined oil from the lemon eucalyptus tree is used in perfumery, a refined form of this oil is used in insect repellents. The refined oils citronellal content is turned into cis- and trans- isomers of p-menthane-3,8-diol (PMD), a process which occurs naturally as the eucalyptus leaves age. This refined oil, which includes related compounds from the essential corymbia citriodora, is known widely by its registered tradename, "Citriodiol", but also by generic names which vary by country or continent: "oil of lemon eucalyptus" or "OLE"(USA); "PMD rich botanic oil" or "PMDRBO"(Europe); "PMD and related oil of lemon eucalyptus compounds" (Canada); Extract of Lemon Eucalyptus (Australia). Pure PMD is synthesized for commercial production from synthetic citronellal.</p>
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Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	NOW Health Group - NOW Foods
Address	395 Glen Ellyn Road, Bloomingdale, IL 60108
Telephone	630-545-9098
Fax	n/a
Website	www.nowfoods.com
Customer Service	1888-669-3663

Emergency phone number

Association / Organisation	ChemTel
Emergency telephone numbers	800-255-3927
Other emergency telephone numbers	813-248-0586 International

SECTION 2 HAZARD(S) IDENTIFICATION

Classification of the substance or mixture

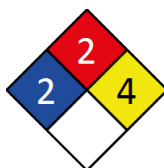
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PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (EUCALYPTUS CITRIODORA)

	Min	Max
Flammability	1	
Toxicity	1	
Body Contact	2	
Reactivity	2	
Chronic	2	

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

Classification	Flammable Liquid Category 4, Skin Corrosion/Irritation Category 2, Eye Irritation Category 2A, Skin Sensitizer Category 1, Specific target organ toxicity - single exposure Category 3 (respiratory tract irritation), Specific target organ toxicity - single exposure Category 3 (narcotic effects), Acute Aquatic Hazard Category 2, Chronic Aquatic Hazard Category 2
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Label elements

GHS label elements	
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SIGNAL WORD	WARNING
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Hazard statement(s)

H227	Combustible liquid
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H317	May cause an allergic skin reaction.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H411	Toxic to aquatic life with long lasting effects.

Hazard(s) not otherwise specified

Not Applicable

Precautionary statement(s) Prevention

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P271	Use in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing mist/vapours/spray.

Precautionary statement(s) Response

P362	Take off contaminated clothing and wash before reuse.
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam for extinction.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.

Precautionary statement(s) Storage

P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container in accordance with local regulations.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

CAS No	%[weight]	Name
129828-24-6		<u>PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (Eucalyptus citriodora)</u>
		as
106-23-0	75-80	<u>citronellal</u>
106-22-9	10~	<u>beta-citronellol</u>
150-84-5	10~	<u>citronellyl acetate</u>
		ageing of the oil produces water soluble
91739-72-9		<u>p-menthane-3,8-diol</u>

Mixtures

See section above for composition of Substances

SECTION 4 FIRST-AID MEASURES

Description of first aid measures

Eye Contact	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Wash out immediately with fresh running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Seek medical attention without delay; if pain persists or recurs seek medical attention. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.
Skin Contact	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately remove all contaminated clothing, including footwear. ▶ Flush skin and hair with running water (and soap if available). ▶ Seek medical attention in event of irritation.
Inhalation	<ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay.
Ingestion	<ul style="list-style-type: none"> ▶ If swallowed do NOT induce vomiting. ▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration. ▶ Observe the patient carefully. ▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious. ▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink. ▶ Seek medical advice. ▶ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

Most important symptoms and effects, both acute and delayed

See Section 11

Indication of any immediate medical attention and special treatment needed

In acute poisonings by essential oils the stomach should be emptied by aspiration and lavage. Give a saline purgative such as sodium sulfate (30 g in 250 ml water) unless catharsis is already present. Demulcent drinks may also be given. Large volumes of fluid should be given provided renal function is adequate. [MARTINDALE: The Extra Pharmacopoeia, 28th Ed.]

SECTION 5 FIRE-FIGHTING MEASURES

Extinguishing media

- ▶ Alcohol stable foam.
- ▶ Dry chemical powder.
- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.

Special hazards arising from the substrate or mixture

Fire Incompatibility	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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Special protective equipment and precautions for fire-fighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear full body protective clothing with breathing apparatus. ▶ Prevent, by any means available, spillage from entering drains or water course. ▶ Use water delivered as a fine spray to control fire and cool adjacent area.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Combustible. ▶ Slight fire hazard when exposed to heat or flame. ▶ Heating may cause expansion or decomposition leading to violent rupture of containers. ▶ On combustion, may emit toxic fumes of carbon monoxide (CO). <p>Combustion products include; carbon dioxide (CO₂) other pyrolysis products typical of burning organic material CARE: Water in contact with hot liquid may cause foaming and a steam explosion with wide scattering of hot oil and possible severe burns. Foaming may cause overflow of containers and may result in possible fire.</p>

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	<p>Environmental hazard - contain spillage.</p> <ul style="list-style-type: none"> ▶ Clean up all spills immediately. ▶ Avoid breathing vapours and contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. ▶ Contain and absorb spill with sand, earth, inert material or vermiculite.
Major Spills	<p>Environmental hazard - contain spillage.</p> <p>CARE: Absorbent materials wetted with occluded oil must be moistened with water as they may auto-oxidize, become self heating and ignite. Some oils slowly oxidise when spread in a film and oil on cloths, mops, absorbents may autoxidise and generate heat, smoulder, ignite and burn. In the workplace oily rags should be collected and immersed in water.</p> <p>Moderate hazard.</p> <ul style="list-style-type: none"> ▶ Clear area of personnel and move upwind. ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves.

Personal Protective Equipment advice is contained in Section 8 of the SDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> ▶ DO NOT allow clothing wet with material to stay in contact with skin ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps.
Other information	<p>Essential oil oxidation accelerates with the concentration of dissolved oxygen, which in turn depends largely on oxygen partial pressure in the head-space as well as ambient temperature. Depending on the particular essential oil and the ambient temperature, oxidation will not necessarily be prevented by avoidance of container head-space. Instead essential oils should be treated with inert gas such as argon, cautiously flushed through to displace remaining air, to prevent the formation of peroxides efficiently.</p> <ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry, well-ventilated area. ▶ Store away from incompatible materials and foodstuff containers.

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> ▶ Metal can or drum ▶ Packaging as recommended by manufacturer. ▶ Check all containers are clearly labelled and free from leaks.
Storage incompatibility	<p>Due to their structural relationship within the same chemical group, essential oil components are known to easily convert into each other by oxidation, isomerisation, cyclisation, or dehydrogenation reactions, triggered either enzymatically or chemically. Temperature, light, and oxygen availability are recognised to have a crucial impact on essential oil integrity. Susceptibility of essential oils to degradation largely depends on compound spectra as components' molecular structures have a substantial effect on the degree of oxidation.</p> <p>Constituting an array of many lipophilic and highly volatile components derived from a great range of different chemical classes, essential oils are known to be susceptible to conversion and degradation reactions.</p> <p>Terpenoids and terpenes, are generally unsaturated, are thermolabile, are often volatile and may be easily oxidised or hydrolysed depending on their respective structure.</p> <p>Terpenoids are subject to autoxidation. Autoxidation is any oxidation that occurs in open air or in presence of oxygen (and sometimes UV radiation) and forms peroxides and hydroperoxides.</p> <p>Though autoxidation has been particularly investigated in the field of fatty oils, it also plays a most crucial part for terpenoid deterioration.</p> <ul style="list-style-type: none"> ▶ The various oxides of nitrogen and peroxyacids may be dangerously reactive in the presence of alkenes. BREThERICK L.: Handbook of Reactive Chemical Hazards ▶ Avoid reaction with strong Lewis or mineral acids. ▶ Reaction with halogens requires carefully controlled conditions. ▶ Free radical initiators should be avoided. <p>HAZARD:</p> <ul style="list-style-type: none"> ▶ Although anti-oxidants may be present, in the original formulation, these may deplete over time as they come into contact with air. ▶ Rags wet / soaked with unsaturated hydrocarbons / drying oils may auto-oxidise; generate heat and, in-time, smoulder and ignite. This is especially the case where oil-soaked materials are folded, bunched, compressed, or piled together - this allows the heat to accumulate or even accelerate the reaction ▶ Oily cleaning rags should be collected regularly and immersed in water, or spread to dry in safe-place away from direct sunlight or stored, immersed, in solvents in suitably closed containers. <p>The interaction of alkenes and alkynes with nitrogen oxides and oxygen may produce explosive addition products; these may form at very low temperatures and explode on heating to higher temperatures (the addition products from 1,3-butadiene and cyclopentadiene form rapidly at -150 C and ignite or explode on warming to -35 to -15 C). These derivatives ("pseudo- nitrosites") were formerly used to characterise terpene hydrocarbons.</p> <p>Exposure to air must be kept to a minimum so as to limit the build-up of peroxides which will concentrate in bottoms if the product is distilled. The product must not be distilled to dryness if the peroxide concentration is substantially above 10 ppm (as active oxygen) since explosive decomposition may occur.</p>

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA

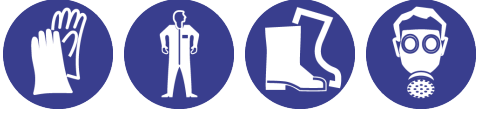
Not Available

EMERGENCY LIMITS

Ingredient	Material name	TEEL-1	TEEL-2	TEEL-3
PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (EUCALYPTUS CITRIODORA)	Not Available	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (Eucalyptus citriodora)	Not Available	Not Available
citronellal	Not Available	Not Available
beta-citronellol	Not Available	Not Available
citronellyl acetate	Not Available	Not Available
p-menthane-3,8-diol	Not Available	Not Available

Exposure controls

Appropriate engineering controls	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.</p> <p>Care: Atmospheres in bulk storages and even apparently empty tanks may be hazardous by oxygen depletion. Atmosphere must be checked before entry.</p> <p>Requirements of State Authorities concerning conditions for tank entry must be met. Particularly with regard to training of crews for tank entry; work permits; sampling of atmosphere; provision of rescue harness and protective gear as needed</p>
Personal protection	
Eye and face protection	<ul style="list-style-type: none"> ▶ Safety glasses with side shields. ▶ Chemical goggles. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none"> ▶ Wear chemical protective gloves, e.g. PVC. ▶ Wear safety footwear or safety gumboots, e.g. Rubber <p>NOTE:</p> <ul style="list-style-type: none"> ▶ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact. ▶ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed. <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Suitability and durability of glove type is dependent on usage.</p> <ul style="list-style-type: none"> ▶ Neoprene gloves
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ Overalls. ▶ P.V.C. apron. ▶ Barrier cream.
Thermal hazards	Not Available

Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.

Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A-AUS P2	-	A-PAPR-AUS / Class 1 P2
up to 50 x ES	-	A-AUS / Class 1 P2	-
up to 100 x ES	-	A-2 P2	A-PAPR-2 P2 ^

^ - Full-face

A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO₂), G = Agricultural chemicals, K = Ammonia(NH₃), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	<p>An essential oil is a concentrated hydrophobic liquid containing volatile aroma compounds from plants. Essential oils are also known as volatile oils, ethereal oils, aetherolea, or simply as the oil of the plant from which they were extracted. An oil is "essential" in the sense that it contains the "essence of" the plant's fragrance - the characteristic fragrance of the plant from which it is derived.</p> <p>NOTE:</p> <p>Because essential oils can be extracted from different parts of a particular plant, (with each varying in composition) a particular CAS Number, assigned to one composition, is often used, wrongly, to describe another composition.</p> <p> Pale yellow to greenish yellow clear liquid with fresh citronella-like, floral odour; does not mix well with water. Soluble in benzyl benzoate, fixed oils, paraffin, propylene glycol. Some extracts are flammable liquids.</p>		
Physical state	Liquid	Relative density (Water = 1)	0.85-0.87
Odour	Not Available	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Available
pH (as supplied)	Not Applicable	Decomposition temperature	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Available

PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (EUCALYPTUS CITRIODORA)

Initial boiling point and boiling range (°C)	200	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	78	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Combustible.	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Available	Surface Tension (dyn/cm or mN/m)	Not Available
Lower Explosive Limit (%)	Not Available	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Available	Gas group	Not Available
Solubility in water (g/L)	Partly miscible	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur.
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhaled	<p>The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.</p> <p>Inhalation hazard is increased at higher temperatures.</p> <p>Inhalation of essential oil volatiles may cause dizziness, rapid, shallow breathing, increased heart rate, respiratory irritation, loss of consciousness or convulsions. Urination may stop, and there may be swelling and inflammation of the lungs.</p> <p>Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination.</p> <p>Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.</p>				
Ingestion	<p>Accidental ingestion of the material may be damaging to the health of the individual.</p> <p>Terpenes and their oxygen-containing counterparts, the terpenoids, produce a variety of effects. Pine oil monoterpenes, for example, produce stomach inflammation with bleeding, characterised by stomach pain and vomiting.</p> <p>Essential oils cause mild irritation of the mouth if taken orally, causing more saliva to be produced and a warm feeling. Large amounts affect the digestive system causing nausea, vomiting and diarrhoea.</p>				
Skin Contact	<p>This material can cause inflammation of the skin on contact in some persons.</p> <p>The material may accentuate any pre-existing dermatitis condition</p> <p>Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.</p> <p>Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.</p> <p>Essential oils irritate the skin and redden it, causing at first warmth and smarting, followed by some local loss of sensation. They have been used to treat chronic inflammatory conditions and to relieve neuralgia and rheumatic pain.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p>				
Eye	This material can cause eye irritation and damage in some persons.				
Chronic	<p>Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>In the presence of air, a number of common flavour and fragrance chemicals can form peroxides surprisingly fast. Antioxidants can in most cases minimise the oxidation.</p> <p>Fragrance terpenes are generally easily oxidised in air. Non-oxidised limonene, linalool and caryophyllene turned out to be very weak sensitizers, however after oxidation limonene hydroperoxide and linalool hydroperoxide are strong sensitizers.</p> <p>Some oxidised terpenoids as well as some aged essential oils have revealed skin-sensitising capacities, leading to a hypersensitivity reaction synonymous to allergic contact dermatitis. The allergenic potency in some flavouring could be mainly attributed to terpenoid hydroperoxides intermediately built-up upon autoxidation, while their non-oxidised counterparts as well as most degradation products were proven to be not or only barely irritating</p> <p>Peroxidisable terpenes and terpenoids should only be used when the level of peroxides is kept to the lowest practicable level, for instance by adding antioxidants at the time of production. Such products should have a peroxide value of less than 10 millimoles peroxide per liter. This requirement is based on the published literature mentioning sensitising properties when containing peroxides.</p>				
PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (Eucalyptus citriodora)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">TOXICITY</td> <td style="text-align: center;">IRRITATION</td> </tr> <tr> <td style="text-align: center;">Not Available</td> <td style="text-align: center;">Not Available</td> </tr> </table>	TOXICITY	IRRITATION	Not Available	Not Available
TOXICITY	IRRITATION				
Not Available	Not Available				

PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (EUCALYPTUS CITRIODORA)

citronellal	TOXICITY	IRRITATION
	dermal (rat) LD50: >2000 mg/kg ^[1] Oral (rat) LD50: ca.2150 mg/kg ^[1]	Not Available
beta-citronellol	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: 2650 mg/kg ^[2] Oral (rat) LD50: 3450 mg/kg ^[2]	Skin (guin.pig): 100mg/24h-SEVERE Skin (man): 16 mg/48h - mod Skin (rabbit): 100 mg/24h-SEVERE
citronellyl acetate	TOXICITY	IRRITATION
	Oral (rat) LD50: 6800 mg/kg ^[2]	Skin (human) 20 mg/48h - mild Skin (rabbit): 500 mg/24h
p-menthane-3,8-diol	TOXICITY	IRRITATION
	Dermal (rabbit) LD50: >5000 mg/kg ^{**[2]} Oral (rat) LD50: >5000 mg/kg ^{**[2]}	Eye (rabbit): Corrosive * Eye (rabbit): SEVERE * Skin: rabbit: slight *

Legend: 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. * Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (EUCALYPTUS CITRIODORA)	<p>The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.</p> <p>Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.</p> <p>The terpenoid hydrocarbons are found in needle trees and deciduous plants. This category of chemicals shows very low acute toxicity. They are excreted in the urine. They are unlikely to cause genetic damage, but animal testing shows that they do cause increased rates of kidney cancer.</p> <p>No significant acute toxicological data identified in literature search.</p> <p>Cross-reactivity is also expected between ester derivatives and their parent alcohols, as the esters will be hydrolysed by esterases in the skin. Esters of important contact allergens that can be activated by hydrolysis in the skin are isoeugenol acetate, eugenyl acetate and geranyl acetate all of which are known to be used as fragrance ingredients.</p> <p>Adverse reactions to fragrances in perfumes and in fragranced cosmetic products include allergic contact dermatitis, irritant contact dermatitis, photosensitivity, immediate contact reactions (contact urticaria), and pigmented contact dermatitis. Airborne and conjugal contact dermatitis occur.</p> <p>Intolerance to perfumes, by inhalation, may occur if the perfume contains a sensitising principal. Symptoms may vary from general illness, coughing, phlegm, wheezing, chest-tightness, headache, exertional dyspnoea, acute respiratory illness, hayfever, and other respiratory diseases (including asthma).</p> <p>Fragrance allergens act as haptens, i.e. low molecular weight chemicals that are immunogenic only when attached to a carrier protein. However, not all sensitising fragrance chemicals are directly reactive, but require previous activation. A prehapten is a chemical that itself is non- or low-sensitising, but that is transformed into a hapten outside the skin by simple chemical transformation (air oxidation, photoactivation) and without the requirement of specific enzymatic systems.</p> <p>In the case of prehaptens, it is possible to prevent activation outside the body to a certain extent by different measures, e.g. prevention of air exposure during handling and storage of the ingredients and the final product, and by the addition of suitable antioxidants.</p>
	CITRONELLAL
BETA-CITRONELLOL	<p>The following information refers to contact allergens as a group and may not be specific to this product. Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.</p> <p>Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.</p> <p>Adverse reactions to fragrances in perfumes and in fragranced cosmetic products include allergic contact dermatitis, irritant contact dermatitis, photosensitivity, immediate contact reactions (contact urticaria), and pigmented contact dermatitis. Airborne and conjugal contact dermatitis occur.</p>

PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (EUCALYPTUS CITRIODORA)

	<p>Intolerance to perfumes, by inhalation, may occur if the perfume contains a sensitising principal. Symptoms may vary from general illness, coughing, phlegm, wheezing, chest-tightness, headache, exertional dyspnoea, acute respiratory illness, hayfever, and other respiratory diseases (including asthma). Fragrance allergens act as haptens, i.e. low molecular weight chemicals that are immunogenic only when attached to a carrier protein. However, not all sensitising fragrance chemicals are directly reactive, but require previous activation. A prehapten is a chemical that itself is non- or low-sensitising, but that is transformed into a hapten outside the skin by simple chemical transformation (air oxidation, photoactivation) and without the requirement of specific enzymatic systems.</p> <p>In the case of prehapten, it is possible to prevent activation outside the body to a certain extent by different measures, e.g. prevention of air exposure during handling and storage of the ingredients and the final product, and by the addition of suitable antioxidants.</p> <p>Citronellol, geraniol, nerol, and geranyl acetate are currently generally regarded as safe by the US FDA for their intended use as flavouring substances. They are ubiquitous in the plant kingdom. Terpenoid alcohol, formed in the gastrointestinal tract, as a result of hydrolysis, is rapidly absorbed, metabolised and excreted via the urine. It has no repeat dose effect, no genetic and cancer causing effect but may harm the unborn child of a pregnant woman.</p> <p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>The material may produce respiratory tract irritation, and result in damage to the lung including reduced lung function.</p> <p>The material may cause severe skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. Repeated exposures may produce severe ulceration.</p>		
CITRONELLYL ACETATE	<p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions.</p> <p>Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.</p> <p>Cross-reactivity is also expected between ester derivatives and their parent alcohols, as the esters will be hydrolysed by esterases in the skin. Esters of important contact allergens that can be activated by hydrolysis in the skin are isoeugenol acetate, eugenyl acetate and geranyl acetate all of which are known to be used as fragrance ingredients.</p> <p>Adverse reactions to fragrances in perfumes and in fragranced cosmetic products include allergic contact dermatitis, irritant contact dermatitis, photosensitivity, immediate contact reactions (contact urticaria), and pigmented contact dermatitis. Airborne and conjugal contact dermatitis occur.</p> <p>Intolerance to perfumes, by inhalation, may occur if the perfume contains a sensitising principal. Symptoms may vary from general illness, coughing, phlegm, wheezing, chest-tightness, headache, exertional dyspnoea, acute respiratory illness, hayfever, and other respiratory diseases (including asthma). Fragrance allergens act as haptens, i.e. low molecular weight chemicals that are immunogenic only when attached to a carrier protein. However, not all sensitising fragrance chemicals are directly reactive, but require previous activation. A prehapten is a chemical that itself is non- or low-sensitising, but that is transformed into a hapten outside the skin by simple chemical transformation (air oxidation, photoactivation) and without the requirement of specific enzymatic systems.</p> <p>In the case of prehapten, it is possible to prevent activation outside the body to a certain extent by different measures, e.g. prevention of air exposure during handling and storage of the ingredients and the final product, and by the addition of suitable antioxidants.</p> <p>Citronellol, geraniol, nerol, and geranyl acetate are currently generally regarded as safe by the US FDA for their intended use as flavouring substances. They are ubiquitous in the plant kingdom. Terpenoid alcohol, formed in the gastrointestinal tract, as a result of hydrolysis, is rapidly absorbed, metabolised and excreted via the urine. It has no repeat dose effect, no genetic and cancer causing effect but may harm the unborn child of a pregnant woman.</p> <p>The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin.</p>		
P-MENTHANE-3,8-DIOL	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included in the criteria for diagnosis of RADS.</p> <p>for trans form: Convulsions recorded. In an acute oral toxicity study, 5 groups of 5 female rats were dosed with 500, 875, 1250, 2000 and 5000 mg/kg body weight, and 1 group of 5 male rats was dosed at 5000 mg/kg body weight. The primary clinical signs of toxicity were decreased activity in 1 female (500 mg/kg group) and in all 5 females in the 1250 mg/kg group, and reduced/no feces were observed in 2 rats in this dose group. Wobbly gait was observed in 5 female rats at 1250 mg/kg. Other clinical effects noted in the 3 other dose groups included breathing abnormalities, prostration, apparent hypothermia, hunched posture, urine stain, ocular discharge, decreased food consumption, and/or dark material around the facial area. Dermal toxicity: 5 Male and 5 female NZW rabbits were tested at 5000 mg/kg. All rats survived and gained weight. Transient dark material around the mouth was observed in one animal. Significant dermal irritation was noted at the site of test material application, which included erythema, edema, dermal lesions, eschar, necrosis, desquamation and blanching, to varying degrees in all animals tested. Eye Irritation: Nine male NZW rabbits (5 males, 4 females) were treated with 0.1 mL of p-Menthane-3,8-diol. The treated eyes of 3 (1 male, 2 females) of the animals were rinsed with physiological saline approximately 30 seconds after instillation of the test material. All rabbits exhibited corneal opacity, iritis, and conjunctival irritation 1 hour after test material instillation, which persisted through 72 hours. In the group with unwashed eyes, corneal opacity persisted in 4 rabbits through day 7, and in 1 rabbit until the study was terminated at 28 days post instillation. PMD is not a skin sensitiser. The no-observed-adverse-effect level (NOAEL) from a 90-day dermal toxicity study in rats was established at a limit dose of 1000 mg/kg/day. The NOAEL for immune suppression, as determined in a 28-day dermal study, via a primary antibody response to sheep red blood cells/plaque forming cell assay was > 3000 mg/kg/day in mice. The NOAEL for maternal and developmental toxicity was established in rabbits at 3000 mg/kg/day by the dermal route. * p-Menthane-3,8-diol (011550) Biopesticide Registration Eligibility Document (US EPA)</p>		
Acute Toxicity	☐	Carcinogenicity	☐
Skin Irritation/Corrosion	✓	Reproductivity	☐
Serious Eye Damage/Irritation	✓	STOT - Single Exposure	✓
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	☐
Mutagenicity	☐	Aspiration Hazard	☐

Legend: ✗ – Data available but does not fill the criteria for classification
✓ – Data required to make classification available
☐ – Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Ingredient	Endpoint	Test Duration (hr)	Species	Value	Source
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Continued...

PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (EUCALYPTUS CITRIODORA)

citronellal	EC50	96	Algae or other aquatic plants	3.390mg/L	3
citronellal	LC50	96	Fish	4.277mg/L	3
citronellal	NOEC	96	Fish	10mg/L	2
citronellal	EC50	48	Crustacea	8.7mg/L	2
citronellal	EC50	72	Algae or other aquatic plants	6.74mg/L	2
beta-citronellol	EC50	384	Crustacea	0.479mg/L	3
beta-citronellol	LC50	96	Fish	1.928mg/L	3
beta-citronellol	EC50	48	Crustacea	17.48mg/L	2
beta-citronellol	NOEC	48	Crustacea	3.1mg/L	2
beta-citronellol	EC50	72	Algae or other aquatic plants	2.4mg/L	2
citronellyl acetate	EC50	96	Algae or other aquatic plants	0.112mg/L	3
citronellyl acetate	LC50	96	Fish	1.282mg/L	3
citronellyl acetate	EC50	48	Crustacea	3.48mg/L	2
citronellyl acetate	EC50	48	Crustacea	4.97mg/L	2
citronellyl acetate	NOEC	48	Crustacea	1.08mg/L	2
p-menthane-3,8-diol	EC50	384	Crustacea	4.339mg/L	3
p-menthane-3,8-diol	EC50	96	Algae or other aquatic plants	47.376mg/L	3
p-menthane-3,8-diol	LC50	96	Fish	17.968mg/L	3

Legend:

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Toxic to aquatic organisms.

Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

May cause long-term adverse effects in the aquatic environment.

For monoterpenes:

Environmental Fate:

Photodegradation: The calculated photodegradation half-lives for the structurally defined terpenoid hydrocarbons in this chemical category, are short, ranging from 0.884 to 0.64 hours.

Stability in Water: No hydrolysis is possible for any of the materials in this group. All are expected to be stable in aqueous solution.

Biodegradation: Studies show that limen and terpinolene are completely degradable in extracts prepared from watershed soils of coniferous or deciduous forests.

For Terpenoid Primary Alcohols and Related Esters:

Atmospheric Fate: Citronellol, geraniol and nerol degrade in the atmosphere with half-lives ranging from 19 minutes to 1.3 hours. Acetylated myrcene is expected to be in the same range.

Structurally, these substances are unsaturated primary alcohols that have the potential to form radical species, in the gas phase, and be oxidized to the corresponding unsaturated aldehyde.

Terrestrial Fate: These substances are expected to have high mobility in soil, with the exception of acetylated myrcene, which is expected to be moderately mobile.

For Terpenes such as Limonene and Isoprene:

Atmospheric Fate: Contribute to aerosol and photochemical smog formation. When terpenes are introduced to the atmosphere, may either decrease ozone concentrations when oxides of nitrogen are low or, if emissions take place in polluted air (i.e. containing high concentrations of nitrogen oxides), leads to an increase in ozone concentrations. Lower terpenoids can react with unstable reactive gases and may act as precursors of photochemical smog therefore indirectly influencing community and ecosystem properties. The reactions of ozone with larger unsaturated compounds, such as the terpenes can give rise to oxygenated species with low vapour pressures that subsequently condense to form secondary organic aerosol.

DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
citronellal	LOW	LOW
beta-citronellol	LOW	LOW
citronellyl acetate	LOW	LOW
p-menthane-3,8-diol	LOW	LOW

Bioaccumulative potential

Ingredient	Bioaccumulation
citronellal	MEDIUM (LogKOW = 3.83)
beta-citronellol	MEDIUM (LogKOW = 3.91)
citronellyl acetate	HIGH (LogKOW = 4.5607)
p-menthane-3,8-diol	LOW (LogKOW = 2.2852)

Mobility in soil

Ingredient	Mobility
citronellal	LOW (KOC = 147.7)
beta-citronellol	LOW (KOC = 70.79)
citronellyl acetate	LOW (KOC = 604.3)
p-menthane-3,8-diol	LOW (KOC = 10)



SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> ▶ Containers may still present a chemical hazard/ danger when empty. ▶ Return to supplier for reuse/ recycling if possible. <p>Otherwise:</p> <ul style="list-style-type: none"> ▶ If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill. ▶ Where possible retain label warnings and SDS and observe all notices pertaining to the product. <p>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.</p> <p>A Hierarchy of Controls seems to be common - the user should investigate:</p> <ul style="list-style-type: none"> ▶ Reduction ▶ Reuse ▶ Recycling ▶ Disposal (if all else fails) <p>This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.</p> <ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. ▶ Recycle wherever possible or consult manufacturer for recycling options. ▶ Consult State Land Waste Authority for disposal. ▶ Bury or incinerate residue at an approved site. ▶ Recycle containers if possible, or dispose of in an authorised landfill.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	
	

Land transport (DOT)

UN number	3082				
Packing group	III				
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (contains citronellal)				
Environmental hazard	Not Applicable				
Transport hazard class(es)	<table border="0"> <tr> <td>Class</td> <td>9</td> </tr> <tr> <td>Subrisk</td> <td>Not Applicable</td> </tr> </table>	Class	9	Subrisk	Not Applicable
Class	9				
Subrisk	Not Applicable				
Special precautions for user	<table border="0"> <tr> <td>Hazard Label</td> <td>9</td> </tr> <tr> <td>Special provisions</td> <td>8, 146, 173, 335, IB3, T4, TP1, TP29</td> </tr> </table>	Hazard Label	9	Special provisions	8, 146, 173, 335, IB3, T4, TP1, TP29
Hazard Label	9				
Special provisions	8, 146, 173, 335, IB3, T4, TP1, TP29				

Air transport (ICAO-IATA / DGR)

UN number	3082														
Packing group	III														
UN proper shipping name	Environmentally hazardous substance, liquid, n.o.s. * (contains citronellal)														
Environmental hazard	Not Applicable														
Transport hazard class(es)	<table border="0"> <tr> <td>ICAO/IATA Class</td> <td>9</td> </tr> <tr> <td>ICAO / IATA Subrisk</td> <td>Not Applicable</td> </tr> <tr> <td>ERG Code</td> <td>9L</td> </tr> </table>	ICAO/IATA Class	9	ICAO / IATA Subrisk	Not Applicable	ERG Code	9L								
ICAO/IATA Class	9														
ICAO / IATA Subrisk	Not Applicable														
ERG Code	9L														
Special precautions for user	<table border="0"> <tr> <td>Special provisions</td> <td>A97 A158 A197</td> </tr> <tr> <td>Cargo Only Packing Instructions</td> <td>964</td> </tr> <tr> <td>Cargo Only Maximum Qty / Pack</td> <td>450 L</td> </tr> <tr> <td>Passenger and Cargo Packing Instructions</td> <td>964</td> </tr> <tr> <td>Passenger and Cargo Maximum Qty / Pack</td> <td>450 L</td> </tr> <tr> <td>Passenger and Cargo Limited Quantity Packing Instructions</td> <td>Y964</td> </tr> <tr> <td>Passenger and Cargo Limited Maximum Qty / Pack</td> <td>30 kg G</td> </tr> </table>	Special provisions	A97 A158 A197	Cargo Only Packing Instructions	964	Cargo Only Maximum Qty / Pack	450 L	Passenger and Cargo Packing Instructions	964	Passenger and Cargo Maximum Qty / Pack	450 L	Passenger and Cargo Limited Quantity Packing Instructions	Y964	Passenger and Cargo Limited Maximum Qty / Pack	30 kg G
Special provisions	A97 A158 A197														
Cargo Only Packing Instructions	964														
Cargo Only Maximum Qty / Pack	450 L														
Passenger and Cargo Packing Instructions	964														
Passenger and Cargo Maximum Qty / Pack	450 L														
Passenger and Cargo Limited Quantity Packing Instructions	Y964														
Passenger and Cargo Limited Maximum Qty / Pack	30 kg G														

Sea transport (IMDG-Code / GGVSee)

UN number	3082
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PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (EUCALYPTUS CITRIODORA)

Packing group	III	
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains citronellal)	
Environmental hazard	Marine Pollutant	
Transport hazard class(es)	IMDG Class	9
	IMDG Subrisk	Not Applicable
Special precautions for user	EMS Number	F-A, S-F
	Special provisions	274 335 969
	Limited Quantities	5 L

Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

SECTION 15 REGULATORY INFORMATION**Safety, health and environmental regulations / legislation specific for the substance or mixture****PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (EUCALYPTUS CITRIODORA)(129828-24-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

CITRONELLAL(106-23-0) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

BETA-CITRONELLOL(106-22-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

CITRONELLYL ACETATE(150-84-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

P-MENTHANE-3,8-DIOL(91739-72-9) IS FOUND ON THE FOLLOWING REGULATORY LISTS

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

Federal Regulations**Superfund Amendments and Reauthorization Act of 1986 (SARA)****SECTION 311/312 HAZARD CATEGORIES**

Immediate (acute) health hazard	YES
Delayed (chronic) health hazard	NO
Fire hazard	YES
Pressure hazard	NO
Reactivity hazard	NO

US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)

None Reported

State Regulations**US. CALIFORNIA PROPOSITION 65**

None Reported

National Inventory	Status
Australia - AICS	N (PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (Eucalyptus citriodora))
Canada - DSL	N (p-menthane-3,8-diol)
Canada - NDSL	N (beta-citronellol; citronellyl acetate; citronellal; PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (Eucalyptus citriodora))
China - IECSC	N (PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (Eucalyptus citriodora))
Europe - EINEC / ELINCS / NLP	N (PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (Eucalyptus citriodora))
Japan - ENCS	N (beta-citronellol; citronellyl acetate; PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (Eucalyptus citriodora); p-menthane-3,8-diol)
Korea - KECI	N (PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (Eucalyptus citriodora); p-menthane-3,8-diol)
New Zealand - NZIoC	N (PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (Eucalyptus citriodora); p-menthane-3,8-diol)
Philippines - PICCS	N (PURE AUSTRALIAN LEMON SCENTED EUCALYPTUS OIL (Eucalyptus citriodora))
USA - TSCA	Y
Legend:	Y = All ingredients are on the inventory N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Other information**Ingredients with multiple cas numbers**

Name	CAS No
citronellal	106-23-0, 2385-77-5, 5949-05-3
beta-citronellol	106-22-9, 1117-61-9, 1335-43-9, 26489-01-0, 7540-51-4
p-menthane-3,8-diol	42822-86-6, 91739-72-9

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:

www.chemwatch.net

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

Definitions and abbreviations

PC – TWA: Permissible Concentration-Time Weighted Average
PC – STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit,
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index