



EUCALYPTUS RADIATA OIL

Issue Date: 06/03/2015
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SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	EUCALYPTUS RADIATA OIL
Chemical Name	eucalyptus radiata oil
Proper shipping name	EXTRACTS, AROMATIC, LIQUID (contains eucalyptus radiata oil)
Other means of identification	Not Available
CAS number	92201-64-4

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

Relevant identified uses	In perfumery/ flavouring. Fragrance and flavour raw material; pharmaceuticals. Inhalation expectorant.
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Details of the manufacturer/importer

Registered company name	NOW Heath Group, Inc.
Address	395 Glen Ellyn Rd. Bloomingdale, IL 60108
Telephone	630.545.9098
Fax	630-622-5213
Website	www.now.foods.com

Emergency telephone number

Association / Organisation	Chem Tel
Emergency telephone numbers	1-800-255-3924

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SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

HAZARDOUS CHEMICAL. DANGEROUS GOODS. According to the Model WHS Regulations and the ADG Code.

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability	2	
Toxicity	1	
Body Contact	3	
Reactivity	2	
Chronic	2	

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

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Poisons Schedule	S6
GHS Classification ^[1]	Flammable Liquid Category 3, Oxidizing Liquid Category 3, Skin Corrosion/Irritation Category 2, Serious Eye Damage Category 1, Skin Sensitizer Category 1, STOT - SE (Resp. Irr.) Category 3, STOT - SE (Narcosis) Category 3, Aspiration Hazard Category 1, Acute Aquatic Hazard Category 1, Chronic Aquatic Hazard Category 1
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HSIS ; 3. Classification drawn from EC Directive 1272/2008 - Annex VI

Label elements

GHS label elements	
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SIGNAL WORD	DANGER
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Hazard statement(s)

H226	Flammable liquid and vapour
H272	May intensify fire; oxidizer
H315	Causes skin irritation
H318	Causes serious eye damage
H317	May cause an allergic skin reaction
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H304	May be fatal if swallowed and enters airways
H400	Very toxic to aquatic life
H410	Very toxic to aquatic life with long lasting effects
AUH019	May form explosive peroxides

Precautionary statement(s) Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P221	Take any precaution to avoid mixing with combustibles/organic material
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement(s) Response

P301+P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/physician/first aider
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P331	Do NOT induce vomiting.
P370+P378	In case of fire: Use alcohol resistant foam or normal protein foam for extinction.

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 to authorised chemical landfill or if organic to high temperature incineration
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

CAS No	%[weight]	Name
Not avail.		3-ethylmethcathinone hydrochloride
		as
470-82-6	>60	eucalyptol
98-55-5	10-30	alpha-terpineol
19902-08-0	1-5	beta-pinene
5989-27-5	5-10	d-limonene
99-87-6	1-5	p-cymene
106-24-1	<1	geraniol
562-74-3	0-5	4-terpineol
80-56-8	5-10	alpha-pinene

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"> ▶ Immediately hold eyelids apart and flush the eye continuously with 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. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ 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.

Indication of any immediate medical attention and special treatment needed

For camphor intoxications:

- ▶ Treatment is aimed at preventing convulsions. Intravenous sodium thiopental, pentobarbital or amobarbital (Amytal) is effective. The drug should be injected slowly until the desired condition is reached, namely a degree of depression sufficient to prevent or stop convulsions and to keep the patient asleep, but not deep enough to depress respirations or blood pressure. Intramuscular sodium phenobarbital may also be helpful. These drugs as well as diazepam, can be used to terminate camphor convulsions.
 - ▶ The patient should be kept under careful observation for many hours and protected from all possible stimuli. Wakefulness, muscular twitchings and increased reflex excitability are signs that warn for the need of additional barbiturate.
 - ▶ Oxygen therapy, artificial respiration, as indicated.
 - ▶ Gastric lavage (with warm water) may be performed when the patient is asleep or well pre-medicated. In the presymptomatic stage, lavage or induction of emesis should take precedence over all measures. Because of its low water solubility, pieces of camphor may remain in the stomach unless a large tube is used for lavage.
 - ▶ After the stomach is emptied, a slurry of activated charcoal and/ or a saline cathartic may be administered by mouth.
 - ▶ Avoid ingestion of oils or alcohol which may promote intestinal absorption of camphor.
 - ▶ Extracorporeal haemodialysis with a lipid dialysate or resin haemoperfusion may be indicated.
 - ▶ Laboratory data are not usually relevant, but liver and kidney tests are advisable. Camphor has been detected in sera of intoxicated patients at levels of 0.3 to 1.8 ug/ml.
- GOSSELIN, SMITH & HODGE: *Clinical Toxicology of Commercial Products, 5th Ed.*

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.]
In case of poisoning, regime for camphor intoxications suggested:

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

	<ul style="list-style-type: none"> ▶ Foam. ▶ Dry chemical powder. ▶ BCF (where regulations permit). ▶ Carbon dioxide.
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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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Advice for firefighters

Fire Fighting	<ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ May be violently or explosively reactive. ▶ Wear breathing apparatus plus protective gloves. ▶ Prevent, by any means available, spillage from entering drains or water course.
Fire/Explosion Hazard	<ul style="list-style-type: none"> ▶ Liquid and vapour are flammable. ▶ Moderate fire hazard when exposed to heat or flame. ▶ Vapour forms an explosive mixture with air. ▶ Moderate explosion hazard when exposed to heat or flame.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Minor Spills	<ul style="list-style-type: none"> ▶ Remove all ignition sources. ▶ Clean up all spills immediately.
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	<ul style="list-style-type: none"> Avoid breathing vapours and contact with skin and eyes. Control personal contact with the substance, by using protective equipment.
Major Spills	<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> <ul style="list-style-type: none"> Clear area of personnel and move upwind.
	Personal Protective Equipment advice is contained in Section 8 of the MSDS.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

Safe handling	<ul style="list-style-type: none"> Containers, even those that have been emptied, may contain explosive vapours. Do NOT cut, drill, grind, weld or perform similar operations on or near containers. DO NOT allow clothing wet with material to stay in contact with skin <p>The substance accumulates peroxides which may become hazardous only if it evaporates or is distilled or otherwise treated to concentrate the peroxides. The substance may concentrate around the container opening for example.</p>
Other information	<ul style="list-style-type: none"> Store in original containers in approved flammable liquid storage area. Store away from incompatible materials in a cool, dry, well-ventilated area. DO NOT store in pits, depressions, basements or areas where vapours may be trapped. No smoking, naked lights, heat or ignition sources.

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> Glass container is suitable for laboratory quantities Packing as supplied by manufacturer. Plastic containers may only be used if approved for flammable liquid. Check that containers are clearly labelled and free from leaks. For low viscosity materials (l) : Drums and jerry cans must be of the non-removable head type.
Storage incompatibility	<p>d-Limonene:</p> <ul style="list-style-type: none"> forms unstable peroxides in storage, unless uninhibited; may polymerise reacts with strong oxidisers and may explode or combust is incompatible with strong acids, including acidic clays, peroxides, halogens, vinyl chloride and iodine pentafluoride flow or agitation may generate electrostatic charges due to low conductivity <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. <ul style="list-style-type: none"> Avoid oxidising agents, acids, acid chlorides, acid anhydrides, chloroformates.

PACKAGE MATERIAL INCOMPATIBILITIES

Not Available

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
d-limonene	Limonene, d-	20 ppm	20 ppm	160 ppm
p-cymene	Isopropyltoluene, 4-; (p-Cymene)	60 mg/m3	660 mg/m3	730 mg/m3
alpha-pinene	Trimethylbicyclo(3.1.1)-2-hept-2-ene, 2,6,6-; (alpha-Pinene)	22 ppm	22 ppm	130 ppm

Ingredient	Original IDLH	Revised IDLH
3-ethylmethcathinone hydrochloride	Not Available	Not Available
eucalyptol	Not Available	Not Available
alpha-terpineol	Not Available	Not Available
beta-pinene	Not Available	Not Available
d-limonene	Not Available	Not Available
p-cymene	Not Available	Not Available
geraniol	Not Available	Not Available
4-terpineol	Not Available	Not Available
alpha-pinene	Not Available	Not Available

Exposure controls

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Appropriate engineering controls	<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> <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard.</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.
Body protection	See Other protection below
Other protection	<ul style="list-style-type: none"> ▶ Overalls. ▶ PVC Apron. ▶ PVC protective suit may be required if exposure severe. ▶ Eyewash unit.
Thermal hazards	Not Available

Recommended material(s)

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the **computer-generated** selection:

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Material	CPI
NITRILE	A
PVA	A
VITON	A

*

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

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	Colourless to pale yellow liquid with aromatic and camphoraceous odour and pungent, cooling, spicy taste. Slightly soluble in water. Mixes with alcohol, chloroform, ether, glacial acetic acid and fixed or volatile oils.		
Physical state	Liquid	Relative density (Water = 1)	0.88-0.91
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)	-9	Viscosity (cSt)	Not Available
Initial boiling point and boiling range (°C)	174-176	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	57	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Flammable.	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not available.	Surface Tension (dyn/cm or mN/m)	Not Available

Continued...

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Lower Explosive Limit (%)	Not available.	Volatile Component (%vol)	100
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>
Ingestion	<p>Accidental ingestion of the material may be damaging to the health of the individual. 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. Excessive use of the oil may result in nausea, vomiting and diarrhoea. Ingestion may produce epigastric burning, vertigo, ataxia, muscle weakness, stupor, pallor, occasional cyanosis, respiratory stridor (oedema), miosis and delirium. Symptoms may be delayed for up to 2 hours.</p>
Skin Contact	<p>The material may accentuate any pre-existing dermatitis condition. 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>
Eye	If applied to the eyes, this material causes severe eye damage.
Chronic	<p>Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems. Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Eucalyptol has been reported to stimulate liver enzyme secretion.</p>

	TOXICITY		IRRITATION	
EUCALYPTUS RADIATA OIL	Not Available		Skin (rabbit): 500 mg/24h - mod	
3-ethylmethcathinone hydrochloride	Not Available		Not Available	
eucalyptol	Dermal (rabbit) LD50: 2480 mg/kg ^[2]		Nil reported	
	Oral (rat) LD50: 2480 mg/kg ^[2]			
alpha-terpineol	Oral (rat) LD50: 5170 mg/kg ^[2]		Not Available	
beta-pinene	Dermal (rabbit) LD50: >2000 mg/kg ^[1]		Skin (rabbit):500 mg/24h-moderate	
	Oral (rabbit) LD50: 4700 mg/kg ^[2]			
d-limonene	Dermal (rabbit) LD50: >5000 mg/kg ^[2]		Nil reported	
	Oral (rat) LD50: >2000 mg/kg ^[1]		Skin (rabbit): 500mg/24h moderate	
p-cymene	Oral (rat) LD50: 3669 mg/kg ^[2]		Not Available	

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	TOXICITY	IRRITATION
geraniol	Dermal (rabbit) LD50: >5000 mg/kg ^[2]	Skin (guinea pig):100mg/24hSEVERE
	Oral (rat) LD50: 2100 mg/kg ^[1]	Skin (man): 16 mg/24h - SEVERE
		Skin (rabbit): 100 mg/24h-SEVERE
4-terpineol	Dermal (rabbit) LD50: >2500 mg/kg ^[2]	Skin (rabbit): 500 mg/24h mod
	Oral (rat) LD50: 1300 mg/kg ^[2]	
alpha-pinene	Dermal (rabbit) LD50: >2000 mg/kg ^[1]	Skin (man): 100% - SEVERE
	Oral (rat) LD50: 3700 mg/kg ^[2]	Skin (rabbit): 500 mg/24h - mod
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's msds. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

EUCALYPTUS RADIATA OIL	Data for eucalyptus oil
3-ETHYLMETHCATHINONE HYDROCHLORIDE	No significant acute toxicological data identified in literature search.
D-LIMONENE	Tumorigenic by RTECS criteria
EUCALYPTUS RADIATA OIL & EUCALYPTOL & BETA-PINENE & D-LIMONENE & GERANIOL & 4-TERPINEOL & ALPHA-PINENE	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.
ALPHA-TERPINEOL & P-CYME	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.

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 required to make classification available
 ✗ – Data available but does not fill the criteria for classification
 ⊘ – Data Not Available to make classification

CMR STATUS

Not Applicable

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. 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.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
eucalyptol	HIGH	HIGH
alpha-terpineol	HIGH	HIGH
beta-pinene	HIGH	HIGH
d-limonene	HIGH	HIGH
p-cymene	HIGH	HIGH
geraniol	LOW	LOW
4-terpineol	HIGH	HIGH

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alpha-pinene	HIGH	HIGH
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Bioaccumulative potential

Ingredient	Bioaccumulation
eucalyptol	LOW (LogKOW = 2.74)
alpha-terpineol	LOW (LogKOW = 3.3318)
beta-pinene	MEDIUM (LogKOW = 4.16)
d-limonene	HIGH (LogKOW = 4.8275)
p-cymene	MEDIUM (LogKOW = 3.9963)
geraniol	LOW (LogKOW = 3.47)
4-terpineol	LOW (LogKOW = 3.26)
alpha-pinene	MEDIUM (LogKOW = 4.44)

Mobility in soil

Ingredient	Mobility
eucalyptol	LOW (KOC = 106.7)
alpha-terpineol	LOW (KOC = 57.85)
beta-pinene	LOW (KOC = 1204)
d-limonene	LOW (KOC = 1324)
p-cymene	LOW (KOC = 1324)
geraniol	LOW (KOC = 70.79)
4-terpineol	LOW (KOC = 61.15)
alpha-pinene	LOW (KOC = 1204)



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 MSDS and observe all notices pertaining to the product.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

	
Marine Pollutant	
HAZCHEM	3Y

Land transport (ADG)

UN number	1169				
Packing group	III				
UN proper shipping name	EXTRACTS, AROMATIC, LIQUID (contains eucalyptus radiata oil)				
Environmental hazard	No relevant data				
Transport hazard class(es)	<table border="0"> <tr> <td>Class</td> <td>3</td> </tr> <tr> <td>Subrisk</td> <td>Not Applicable</td> </tr> </table>	Class	3	Subrisk	Not Applicable
Class	3				
Subrisk	Not Applicable				
Special precautions for user	<table border="0"> <tr> <td>Special provisions</td> <td>223</td> </tr> <tr> <td>Limited quantity</td> <td>5 L</td> </tr> </table>	Special provisions	223	Limited quantity	5 L
Special provisions	223				
Limited quantity	5 L				

Air transport (ICAO-IATA / DGR)

UN number	1169
Packing group	III
UN proper shipping name	Extracts, aromatic, liquid (contains eucalyptus radiata oil)

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Environmental hazard	No relevant data	
Transport hazard class(es)	ICAO/IATA Class	3
	ICAO / IATA Subrisk	Not Applicable
	ERG Code	3L
Special precautions for user	Special provisions	A3
	Cargo Only Packing Instructions	366
	Cargo Only Maximum Qty / Pack	220 L
	Passenger and Cargo Packing Instructions	355
	Passenger and Cargo Maximum Qty / Pack	60 L
	Passenger and Cargo Limited Quantity Packing Instructions	Y344
	Passenger and Cargo Limited Maximum Qty / Pack	10 L

Sea transport (IMDG-Code / GGVSee)

UN number	1169	
Packing group	III	
UN proper shipping name	EXTRACTS, AROMATIC, LIQUID (contains eucalyptus radiata oil)	
Environmental hazard	Not Applicable	
Transport hazard class(es)	IMDG Class	3
	IMDG Subrisk	Not Applicable
Special precautions for user	EMS Number	F-E , S-D
	Special provisions	223 955
	Limited Quantities	5 L

Transport in bulk according to Annex II of MARPOL 73 / 78 and the IBC code

Source	Ingredient	Pollution Category
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	beta-pinene	X
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	d-limonene	Y
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	p-cymene	Y
IMO MARPOL 73/78 (Annex II) - List of Noxious Liquid Substances Carried in Bulk	alpha-pinene	X

SECTION 15 REGULATORY INFORMATION

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

3-ethylmethcathinone hydrochloride(Not avail.) is found on the following regulatory lists	"Not Applicable"
eucalypto(470-82-6) is found on the following regulatory lists	"Australia Inventory of Chemical Substances (AICS)"
alpha-terpineol(98-55-5) is found on the following regulatory lists	"Australia Inventory of Chemical Substances (AICS)"
beta-pinene(19902-08-0) is found on the following regulatory lists	"Australia Inventory of Chemical Substances (AICS)"
d-limonene(5989-27-5) is found on the following regulatory lists	"Australia Inventory of Chemical Substances (AICS)", "International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs", "Australia Hazardous Substances Information System - Consolidated Lists"
p-cymene(99-87-6) is found on the following regulatory lists	"Australia Inventory of Chemical Substances (AICS)"
geraniol(106-24-1) is found on the following regulatory lists	"Australia Inventory of Chemical Substances (AICS)"

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4-terpineol(562-74-3) is found on the following regulatory lists	"Australia Inventory of Chemical Substances (AICS)"
alpha-pinene(80-56-8) is found on the following regulatory lists	"Australia Inventory of Chemical Substances (AICS)"

National Inventory	Status
Australia - AICS	Y
Canada - DSL	Y
China - IECSC	Y
Europe - EINEC / ELINCS / NLP	Y
Japan - ENCS	Y
Korea - KECI	N (4-terpineol)
New Zealand - NZIoC	Y
Philippines - PICCS	Y
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
alpha-terpineol	2438-12-2, 7785-53-7, 8000-41-7, 98-55-5
beta-pinene	127-91-3, 18172-67-3, 19902-08-0
d-limonene	138-86-3, 5989-27-5
4-terpineol	20126-76-5, 562-74-3
alpha-pinene	1330-16-1, 2437-95-8, 7785-26-4, 7785-70-8, 80-56-8

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.

The (M)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.

Other Information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.