

### SPE003 Sphere Ocean Splash

#### Griffiths Equipment Limited

Chemwatch Hazard Alert Code: 2

Chemwatch: 5423-94  
Version No: 3.1.1.1  
Safety Data Sheet according to HSNO Regulations

Issue Date: 18/09/2020  
Print Date: 20/09/2020  
S.GHS.NZL.EN

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

##### Product Identifier

Product name	SPE003 Sphere Ocean Splash
Synonyms	SPE003
Other means of identification	Not Available

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

Relevant identified uses	Air Freshener. Use according to manufacturer's directions.
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##### Details of the supplier of the safety data sheet

Registered company name	Griffiths Equipment Limited
Address	19 Bell Ave, Mount Wellington Auckland 1060 New Zealand
Telephone	+64 9 525 4575
Fax	Not Available
Website	<a href="http://www.griffithsequipment.co.nz">www.griffithsequipment.co.nz</a>
Email	sales@griffithsequipment.co.nz

##### Emergency telephone number


Association / Organisation	NZ NATIONAL POISONS CENTRE
Emergency telephone numbers	0800 POISON or 0800 764-766
Other emergency telephone numbers	International: +64 3 479-7227

#### SECTION 2 Hazards identification

##### Classification of the substance or mixture

Classification [1]	Skin Sensitizer Category 1, Chronic Aquatic Hazard Category 3
Legend:	1. Classified by Chemwatch; 2. Classification drawn from CCID EPA NZ; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI
Determined by Chemwatch using GHS/HSNO criteria	6.5B (contact), 9.1C

##### Label elements

Hazard pictogram(s)	
Signal word	Warning

##### Hazard statement(s)

H317	May cause an allergic skin reaction.
H412	Harmful to aquatic life with long lasting effects.

##### Precautionary statement(s) Prevention

P280	Wear protective gloves/protective clothing/eye protection/face protection.
P261	Avoid breathing dust/fumes.

P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.

**Precautionary statement(s) Response**

P321	Specific treatment (see advice on this label).
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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**SECTION 3 Composition / information on ingredients****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
93685-81-5	1-<5	<u>dodecane, isomers</u>
18479-58-8	1-5	<u>dihydromyrcenol</u>
32210-23-4	1-5	<u>4-tert-butylcyclohexyl acetate</u>
23787-90-8	1-5	<u>isolongifolanone</u>
88-41-5	1-5	<u>2-tert-butylcyclohexyl acetate</u>
Not Available	0.5-1	reaction mass of 2-methylbutyl salicylate and pentyl salicylate
54464-57-2	0.5-1	<u>2-acetyl-1,2,3,4,6,7,8-octahydro-tetramethylnaphthalene</u>
58567-11-6	0.5-1	<u>formaldehyde cyclododecyl ethyl acetal</u>
68155-66-8	0.1-0.5	<u>isocyclemone E</u>
1205-17-0	0.1-0.5	<u>piperonyl propanal</u>
33704-61-9	0.1-0.5	<u>6,7-dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone</u>
67874-81-1	0.1-0.5	<u>cedryl methyl ether</u>
91-64-5	0.1-0.5	<u>coumarin</u>
Not Available	balance	Ingredients determined not to be hazardous

**SECTION 4 First aid measures****Description of first aid measures**

<b>Eye Contact</b>	<p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> <li>▶ Wash out immediately with fresh running water.</li> <li>▶ 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.</li> <li>▶ Seek medical attention without delay; if pain persists or recurs seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	<p>If skin contact occurs:</p> <ul style="list-style-type: none"> <li>▶ Immediately remove all contaminated clothing, including footwear.</li> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ <b>If swallowed do NOT induce vomiting.</b></li> <li>▶ If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</li> <li>▶ Observe the patient carefully.</li> <li>▶ Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.</li> <li>▶ Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.</li> <li>▶ Seek medical advice.</li> <li>▶ If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.</li> </ul>

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5 Firefighting measures****Extinguishing media**

- ▶ Alcohol stable foam.
- ▶ Dry chemical powder.

- ▶ BCF (where regulations permit).
- ▶ Carbon dioxide.
- ▶ Water spray or fog - Large fires only.

#### Special hazards arising from the substrate or mixture

<b>Fire Incompatibility</b>	▶ 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

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use fire fighting procedures suitable for surrounding area.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Solid which exhibits difficult combustion or is difficult to ignite.</li> <li>▶ Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion.</li> <li>▶ Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited; once initiated larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.</li> <li>▶ A dust explosion may release large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people.</li> <li>▶ Usually the initial or primary explosion takes place in a confined space such as plant or machinery, and can be of sufficient force to damage or rupture the plant. If the shock wave from the primary explosion enters the surrounding area, it will disturb any settled dust layers, forming a second dust cloud, and often initiate a much larger secondary explosion. All large scale explosions have resulted from chain reactions of this type.</li> <li>▶ Dry dust can also be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.</li> <li>▶ Build-up of electrostatic charge may be prevented by bonding and grounding.</li> <li>▶ Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.</li> <li>▶ All movable parts coming in contact with this material should have a speed of less than 1-metre/sec.</li> </ul> <p>Combustion products include:  carbon monoxide (CO)  carbon dioxide (CO<sub>2</sub>)  other pyrolysis products typical of burning organic material.  May emit poisonous fumes.  May emit corrosive fumes.</p>

### SECTION 6 Accidental release measures

#### Personal precautions, protective equipment and emergency procedures

See section 8

#### Environmental precautions

See section 12

#### Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up waste regularly and abnormal spills immediately.</li> <li>▶ Avoid breathing dust and contact with skin and eyes.</li> <li>▶ Wear protective clothing, gloves, safety glasses and dust respirator.</li> <li>▶ Use dry clean up procedures and avoid generating dust.</li> <li>▶ Vacuum up or sweep up. <b>NOTE:</b> Vacuum cleaner must be fitted with an exhaust micro filter (HEPA type) (consider explosion-proof machines designed to be grounded during storage and use).</li> <li>▶ Dampen with water to prevent dusting before sweeping.</li> <li>▶ Place in suitable containers for disposal.</li> </ul>
<b>Major Spills</b>	<p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ <b>CAUTION:</b> Advise personnel in area.</li> <li>▶ Alert Emergency Services and tell them location and nature of hazard.</li> <li>▶ Control personal contact by wearing protective clothing.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Recover product wherever possible.</li> <li>▶ <b>IF DRY:</b> Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. <b>IF WET:</b> Vacuum/shovel up and place in labelled containers for disposal.</li> <li>▶ <b>ALWAYS:</b> Wash area down with large amounts of water and prevent runoff into drains.</li> <li>▶ If contamination of drains or waterways occurs, advise Emergency Services.</li> </ul>

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

### SECTION 7 Handling and storage

#### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions)</li> <li>▶ Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame.</li> <li>▶ Establish good housekeeping practices.</li> <li>▶ Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.</li> <li>▶ Use continuous suction at points of dust generation to capture and minimise the accumulation of dusts. Particular attention should be given to overhead and hidden horizontal surfaces to minimise the probability of a "secondary" explosion. According to NFPA Standard 654, dust</li> </ul>
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	<p>layers 1/32 in.(0.8 mm) thick can be sufficient to warrant immediate cleaning of the area.</p> <ul style="list-style-type: none"> <li>▶ Do not use air hoses for cleaning.</li> <li>▶ Minimise dry sweeping to avoid generation of dust clouds. Vacuum dust-accumulating surfaces and remove to a chemical disposal area. Vacuums with explosion-proof motors should be used.</li> <li>▶ Control sources of static electricity. Dusts or their packages may accumulate static charges, and static discharge can be a source of ignition.</li> <li>▶ Solids handling systems must be designed in accordance with applicable standards (e.g. NFPA including 654 and 77) and other national guidance.</li> <li>▶ Do not empty directly into flammable solvents or in the presence of flammable vapors.</li> <li>▶ The operator, the packaging container and all equipment must be grounded with electrical bonding and grounding systems. Plastic bags and plastics cannot be grounded, and antistatic bags do not completely protect against development of static charges.</li> </ul> <p>Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.</p> <ul style="list-style-type: none"> <li>▶ <b>Do NOT cut, drill, grind or weld such containers.</b></li> <li>▶ In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.</li> <li>▶ Limit all unnecessary personal contact.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ When handling, <b>DO NOT eat, drink or smoke.</b></li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry area protected from environmental extremes.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> <li>▶ Protect containers against physical damage and check regularly for leaks.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul> <p>For major quantities:</p> <ul style="list-style-type: none"> <li>▶ Consider storage in banded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams).</li> <li>▶ Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.</li> </ul>

#### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Polyethylene or polypropylene container.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Avoid reaction with oxidising agents, bases and strong reducing agents.</li> <li>▶ Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.</li> </ul>

## 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
coumarin	Coumarin	0.88 mg/m3	9.7 mg/m3	58 mg/m3


Ingredient	Original IDLH	Revised IDLH
dodecane, isomers	Not Available	Not Available
dihydromyrcenol	Not Available	Not Available
4-tert-butylcyclohexyl acetate	Not Available	Not Available
isolongifolanone	Not Available	Not Available
2-tert-butylcyclohexyl acetate	Not Available	Not Available
2-acetyl-1,2,3,4,6,7,8-octahydro-4-methylnaphthalene	Not Available	Not Available
formaldehyde cyclododecyl ethyl acetal	Not Available	Not Available
isocyclemone E	Not Available	Not Available
piperonyl propanal	Not Available	Not Available
6,7-dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone	Not Available	Not Available
cedryl methyl ether	Not Available	Not Available
coumarin	Not Available	Not Available

#### Occupational Exposure Banding

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Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
dodecane, isomers	E	≤ 0.1 ppm
dihydromyrcenol	E	≤ 0.1 ppm
4-tert-butylcyclohexyl acetate	E	≤ 0.1 ppm
isolongifolanone	E	≤ 0.1 ppm
2-tert-butylcyclohexyl acetate	E	≤ 0.1 ppm
2-acetyl-1,2,3,4,6,7,8-octahydrotetramethylnaphthalene	E	≤ 0.1 ppm
formaldehyde cyclododecyl ethyl acetal	E	≤ 0.01 mg/m <sup>3</sup>
isocyclemone E	E	≤ 0.1 ppm
piperonyl propanal	E	≤ 0.1 ppm
6,7-dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone	E	≤ 0.01 mg/m <sup>3</sup>
cedryl methyl ether	E	≤ 0.1 ppm
coumarin	E	≤ 0.01 mg/m <sup>3</sup>
<b>Notes:</b>	Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.	

Exposure controls

<b>Appropriate engineering controls</b>	General exhaust is adequate under normal operating conditions.
<b>Personal protection</b>	
<b>Eye and face protection</b>	No special equipment for minor exposure i.e. when handling small quantities. <b>OTHERWISE:</b> <ul style="list-style-type: none"> <li>Safety glasses with side shields.</li> <li>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. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	No special equipment needed when handling small quantities. <b>OTHERWISE:</b> Wear general protective gloves, e.g. light weight rubber gloves.
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	No special equipment needed when handling small quantities. <b>OTHERWISE:</b> <ul style="list-style-type: none"> <li>Overalls.</li> <li>Skin cleansing cream.</li> <li>Eyewash unit.</li> <li>Do not spray on hot surfaces.</li> </ul>

Respiratory protection

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

Required Minimum Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
up to 10 x ES	A P1 Air-line*	- -	A PAPR-P1 -
up to 50 x ES	Air-line**	A P2	A PAPR-P2
up to 100 x ES	-	A P3 Air-line*	-
100+ x ES	-	Air-line**	A PAPR-P3

\* - Negative pressure demand \*\* - Continuous flow

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(SO<sub>2</sub>), G = Agricultural chemicals, K = Ammonia(NH<sub>3</sub>), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

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**SECTION 9 Physical and chemical properties**

**Information on basic physical and chemical properties**

<b>Appearance</b>	Blue solid with a characteristic ocean splash odour; insoluble in water.		
<b>Physical state</b>	Solid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Applicable	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Applicable
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Immiscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

**SECTION 10 Stability and reactivity**

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

**SECTION 11 Toxicological information**

**Information on toxicological effects**

<b>Inhaled</b>	The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of dusts, or fumes, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.
<b>Ingestion</b>	Accidental ingestion of the material may be damaging to the health of the individual.
<b>Skin Contact</b>	Open cuts, abraded or irritated skin should not be exposed to this material 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. There is some evidence to suggest that this material can cause inflammation of the skin on contact in some persons.
<b>Eye</b>	There is some evidence to suggest that this material can cause eye irritation and damage in some persons.
<b>Chronic</b>	Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population. Certain substances, commonly found in perfumes or perfumed products, produce hypersensitivity. Contact allergy to perfumes occurs with a relatively high incidence, only exceeded by nickel allergy. There is no cure for perfume allergy. One sensitized, exposure to even extremely small amounts of the perfume gives rise to eruptions and eczema. These symptoms may be treated with steroid creams, although frequent use of steroids produces unwanted side effects.

<b>SPE003 Sphere Ocean Splash</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>dodecane, isomers</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>dihydromyrcenol</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: 3600 mg/kg <sup>[2]</sup>	Eye: adverse effect observed (irritating) <sup>[1]</sup>
		Skin (rabbit): 500 mg/24h - mild
		Skin: adverse effect observed (irritating) <sup>[1]</sup>

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4-tert-butylcyclohexyl acetate	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Skin (rabbit): 500 mg/24h mod
isolongifolanone	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >5000 mg/kg <sup>[2]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (rat) LD50: >5000 mg/kg <sup>[2]</sup>	Skin: adverse effect observed (irritating) <sup>[1]</sup>
2-tert-butylcyclohexyl acetate	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >5000 mg/kg <sup>[2]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
Oral (rat) LD50: 4600 mg/kg <sup>[2]</sup>		Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
	<b>TOXICITY</b>	<b>IRRITATION</b>
2-acetyl-1,2,3,4,6,7,8-octahydro-tetramethylnaphthalene	Not Available	Not Available
formaldehyde cyclododecyl ethyl acetal	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >5000 mg/kg <sup>[2]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (rat) LD50: >5000 mg/kg <sup>[2]</sup>	Skin: adverse effect observed (irritating) <sup>[1]</sup>
isocyclemone E	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: >5000 mg/kg <sup>[2]</sup>	Skin (human): irritant (OECD 439) *
	Oral (rat) LD50: >5000 mg/kg <sup>[2]</sup>	
piperonyl propanal	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: 3362 mg/kg <sup>[1]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (rat) LD50: 3561 mg/kg <sup>[1]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
6,7-dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
cedryl methyl ether	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >5000 mg/kg <sup>[2]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Oral (rat) LD50: >5000 mg/kg <sup>[2]</sup>	Skin: no adverse effect observed (not irritating) <sup>[1]</sup>
coumarin	<b>TOXICITY</b>	<b>IRRITATION</b>
	Oral (rat) LD50: 293 mg/kg <sup>[2]</sup>	Not Available

**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

**DODECANE, ISOMERS**

Equivocal tumorigen by RTECS criteria.

Animal studies indicate that normal, branched and cyclic paraffins are absorbed from the gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length, with little absorption above C30. With respect to the carbon chain lengths likely to be present in mineral oil, n-paraffins may be absorbed to a greater extent than iso- or cyclo-paraffins.

The major classes of hydrocarbons are well absorbed into the gastrointestinal tract in various species. In many cases, the hydrophobic hydrocarbons are ingested in association with fats in the diet. Some hydrocarbons may appear unchanged as in the lipoprotein particles in the gut lymph, but most hydrocarbons partly separate from fats and undergo metabolism in the gut cell.

The gut cell may play a major role in determining the proportion of hydrocarbon that becomes available to be deposited unchanged in peripheral tissues such as in the body fat stores or the liver.

Animal testing showed exposure to high concentrations (over 3500 parts per million) of C9 to C13 alkanes in air caused inco-ordination, seizures and spasms. Cerebellar damage was found on autopsy in some animals. It appears that exposure may possibly damage the central nervous system.

The safety of isoparaffins as used in cosmetic products was reviewed by the Cosmetic Ingredient Review (CIR) Expert Panel.

These ingredients function mostly as solvents and also function as emollients in the 0001% to 90% concentration range. The CIR Expert Panel has reviewed relevant animal and clinical data and concluded that these ingredients are safe in the present practices of use and concentration

The CIR Expert Panel noted that most of the available data related to oral or inhalation exposure to isoparaffins, but the dermal and ocular exposure data that were available, suggested mild ocular irritation, mild-to-severe irritation, no sensitization or photosensitization, and no phototoxicity. No significant toxicity was identified in oral or inhalation exposure studies of the following end points: genotoxicity, reproductive and developmental toxicity, or carcinogenicity. Nephrotoxicity, however, was a concern. The Expert Panel noted the involvement of a2u-globulin in the mechanism for isoparaffin-induced nephrotoxicity/renal tubule cell proliferation in male rats of various strains in oral and inhalation exposure studies. Humans lack this protein and, thus, the Panel agreed that findings associated with the a2u-globulin protein in male rats were not relevant to humans. This view was consistent with the US EPA position that it was not possible for the agency to derive an oral RID for chronic oral exposure or a reference concentration for chronic inhalation exposure to isooctane because the available studies were limited, in that they were designed to only investigate the endpoints specific to a2u-globulin-associated nephropathy. The EPA also concluded that there was inadequate evidence to assess the carcinogenic potential of isooctane, based on the absence of human epidemiological studies and chronic bioassays on this compound. However, the CIR Expert Panel noted that no significant tumor incidence was found following life-time dermal application of petrolatum (15% in isooctane) to mice and also found no evidence of any concern regarding carcinogenic potential from exposure to isoparaffins as used in cosmetics.

The potential adverse effects of inhaled aerosols depend on the specific chemical species, the concentration and the duration of the exposure and their site of deposition within the respiratory system. In practice, aerosols should have at least 99% of their

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	<p>particle diameters in the 10 to 110 mm range and the mean particle diameter in a typical aerosol spray has been reported as ~38 mm. Particles with an aerodynamic diameter of &lt;10 mm are respirable. After reviewing the positive acute and subchronic inhalation toxicity data the Expert Panel determined that isoparaffins can be used safely in hair sprays, because the product particle size is not respirable.</p> <p>International Journal of Toxicology 31 (Supplement 3) 269S-295S 2012</p>
DIHYDROMYRCENOL	<p>For terpenoid tertiary alcohols and their related esters: These substances are metabolised in the liver and excreted primarily in the urine and faeces. A portion is also excreted unchanged. They have low short term toxicity when ingested or applied on the skin. However, repeated and long term use may cause dose dependent harm to both the foetus and mother.</p> <p>Current opinion holds that there are no safety concerns regarding the branched chain unsaturated non-cyclic alcohols, as fragrance ingredients, at current declared levels of use and exposure; however, use of these materials at higher maximum levels of skin or whole-body exposure requires re-evaluation.</p> <p>At current declared levels of use, there was no evidence or only minimal evidence of skin irritation in humans. Sensitising hydroperoxides may be formed by contact with air. It should be ensured that oxidation reactions are prevented in the end product. The use of these materials under the declared levels of use and exposure will not induce sensitization. These compounds generally have low acute toxicity. The branched chain, unsaturated alcohols tested had low whole-body toxicity after repeated application. In animals, repeated exposure at high doses caused liver changes and kidney damage.</p> <p>There was little or no evidence of adverse effects on fertility or development. Data on cancer-causing potential is not available, but they are not of primary concern.</p> <p>Alkyl alcohols of chain length C6-13 are absorbed from skin, when inhaled or swallowed but show evidence of little harm. They are broken down and rapidly excreted by the body.</p>
ISOCYCLEMONE E	<p>Dermal (Rat) LD50: &gt;5000 mg/kg(OECD 402)* Eye: non-irritant * (QSAR) * Sensitisation: Component: 68155-66-8 LLNA mouse: Result: Causes sensitization. Method: OECD 429 Repeated dose toxicity: Component: 68155-66-8 Oral rat Number of exposures: 1x /day NOEL: 150 mg/kg Method: OECD Test Guideline 407 Remarks: Repeated dose (28 days) toxicity (oral) Teratogenicity : Component: 68155-66-8 Application Route: Oral rat Number of exposures: 1x /day *1FF MSDS</p>
6,7-DIHYDRO-1,1,2,3,3-PENTAMETHYL-4(5H)-INDANONE	<p>There is increasing evidence emerging that some nitromusks and polycyclic musks, including those commonly used in perfumes, may be capable (either as parent compounds or as metabolites) of interfering with hormone communication systems in fish, amphibians and mammals, and may exacerbate the effects of exposure to other toxic chemicals.</p>
COUMARIN	<p>Fragrance allergens act as haptens, low molecular weight chemicals that cause an immune response only when attached to a carrier protein. However, not all sensitizing fragrance chemicals are directly reactive, but require previous activation. A prohaptens is a chemical that itself causes little or no sensitization, but is transformed into a hapten in the skin (bioactivation), usually via enzyme catalysis. It is not always possible to know whether a particular allergen that is not directly reactive acts as a prohaptens , or both.</p> <p>Prohaptens: Compounds that are bioactivated in the skin and thereby form haptens are referred to prohaptens. The possibility of a prohaptens being activated cannot be avoided by outside measures. Activation processes increase the risk for cross-reactivity between fragrance substances. Various enzymes play roles in both activating and deactivating prohaptens. Skin-sensitizing prohaptens can be recognized and grouped into chemical classes based on knowledge of xenobiotic bioactivation reactions, clinical observations and/or studies of sensitization.</p> <p>QSAR prediction: Prediction of sensitization activity of these substances is complex, especially for those substances that can act both as pre- and prohaptens.</p> <p>The substance is classified by IARC as Group 3: <b>NOT</b> classifiable as to its carcinogenicity to humans. Evidence of carcinogenicity may be inadequate or limited in animal testing.</p>
DODECANE, ISOMERS & 4-TERT-BUTYLCYCLOHEXYL ACETATE & 2-TERT-BUTYLCYCLOHEXYL ACETATE & PIPERONYL PROPANAL & CEDRYL METHYL ETHER & COUMARIN	<p>Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p>
DODECANE, ISOMERS & ISOLONGIFOLANONE & 2-ACETYL-1,2,3,4,6,7,8-OCTAHYDROTETRAMETHYLNAPHTHALENE & PIPERONYL PROPANAL & CEDRYL METHYL ETHER	<p>No significant acute toxicological data identified in literature search.</p>
DIHYDROMYRCENOL & 4-TERT-BUTYLCYCLOHEXYL ACETATE & 6,7-DIHYDRO-1,1,2,3,3-PENTAMETHYL-4(5H)-INDANONE	<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>
DIHYDROMYRCENOL & 2-ACETYL-1,2,3,4,6,7,8-OCTAHYDROTETRAMETHYLNAPHTHALENE & ISOCYCLEMONE E & COUMARIN	<p>Adverse reactions to fragrances in perfumes and fragranced cosmetic products include allergic contact dermatitis, irritant contact dermatitis, sensitivity to light, immediate contact reactions, and pigmented contact dermatitis. Airborne and conjugal contact dermatitis occurs. Contact allergy is a lifelong condition, so symptoms may occur on re-exposure. Allergic contact dermatitis can be severe and widespread, with significant impairment of quality of life and potential consequences for fitness for work.</p> <p>If the perfume contains a sensitizing component, intolerance to perfumes by inhalation may occur. Symptoms may include general unwellness, coughing, phlegm, wheezing, chest tightness, headache, shortness of breath with exertion, acute respiratory illness, hayfever, asthma and other respiratory diseases. Perfumes can induce excess reactivity of the airway without producing allergy or airway obstruction. Breathing through a carbon filter mask had no protective effect.</p> <p>Occupational asthma caused by perfume substances, such as isoamyl acetate, limonene, cinnamaldehyde and benzaldehyde, tend to give persistent symptoms, even though the exposure is below occupational exposure limits. Prevention of contact sensitization to fragrances is an important objective of public health risk management.</p> <p>Hands: Contact sensitization may be the primary cause of hand eczema or a complication of irritant or atopic hand eczema. However hand eczema is a disease involving many factors, and the clinical significance of fragrance contact allergy in severe, chronic hand eczema may not be clear.</p> <p>Underarm: Skin inflammation of the armpits may be caused by perfume in deodorants and, if the reaction is severe, it may spread down the arms and to other areas of the body. In individuals who consulted a skin specialist, a history of such first-time symptoms was significantly related to the later diagnosis of perfume allergy.</p> <p>Face: An important manifestation of fragrance allergy from the use of cosmetic products is eczema of the face. In men, after-shave products can cause eczema around the beard area and the adjacent part of the neck. Men using wet shaving as opposed to dry have been shown to have an increased risk of allergic to fragrances.</p> <p>Irritant reactions: Some individual fragrance ingredients, such as citral, are known to be irritant. Fragrances may cause a</p>



	<p>dose-related contact urticaria (hives) which is not allergic; cinnamal, cinnamic alcohol and Myroxylon pereirae are known to cause hives, but others, including menthol, vanillin and benzaldehyde have also been reported.</p> <p>Pigmentary anomalies: Type IV allergy is responsible for "pigmented cosmetic dermatitis", referring to increased pigmentation on the face and neck. Testing showed a number of fragrance ingredients were associated, including jasmine absolute, ylang-ylang oil, cananga oil, benzyl salicylate, hydroxycitronellal, sandalwood oil, geraniol and geranium oil.</p> <p>Light reactions: Musk ambrette produced a number of allergic reactions mediated by light and was later banned from use in Europe. Furocoumarins (psoralens) in some plant-derived fragrances have caused phototoxic reactions, with redness. There are now limits for the amount of furocoumarins in fragrances. Phototoxic reactions still occur, but are rare.</p> <p>General/respiratory: Fragrances are volatile, and therefore, in addition to skin exposure, a perfume also exposes the eyes and the nose / airway. It is estimated that 2-4% of the adult population is affected by respiratory or eye symptoms by such an exposure. It is known that exposure to fragrances may exacerbate pre-existing asthma. Asthma-like symptoms can be provoked by sensory mechanisms. A significant association was found between respiratory complaints related to fragrances and contact allergy to fragrance ingredients and hand eczema.</p>
DIHYDROMYRCENOL & 2-ACETYL-1,2,3,4,6,7,8-OCTAHYDROTETRAMETHYLNAPHTHALENE & ISOCYCLEMONE E	<p>Fragrance allergens act as haptens, which are small molecules that cause an immune reaction only when attached to a carrier protein. However, not all sensitizing fragrance chemicals are directly reactive, but some require previous activation. A prehapten is a chemical that itself causes little or no sensitization, but it is transformed into a hapten outside the skin by a chemical reaction (oxidation in air or reaction with light) without the requirement of an enzyme.</p> <p>For prehapten, it is possible to prevent activation outside the body to a certain extent by different measures, for example, prevention of air exposure during handling and storage of the ingredients and the final product, and by the addition of suitable antioxidants. When antioxidants are used, care should be taken that they will not be activated themselves, and thereby form new sensitizers.</p> <p>Prehapten: Most terpenes with oxidisable allylic positions can be expected to self-oxidise on air exposure. Depending on the stability of the oxidation products that are formed, the oxidized products will have differing levels of sensitization potential. Tests shows that air exposure of lavender oil increased the potential for sensitization.</p> <p>Prohapten: Compounds that are bioactivated in the skin and thereby form haptens are referred to prohapten. The possibility of a prohapten being activated cannot be avoided by outside measures. Activation processes increase the risk for cross-reactivity between fragrance substances. Various enzymes play roles in both activating and deactivating prohapten. Skin-sensitizing prohapten can be recognized and grouped into chemical classes based on knowledge of xenobiotic bioactivation reactions, clinical observations and/or studies of sensitization.</p> <p>QSAR prediction: Prediction of sensitization activity of these substances is complex, especially for those substances that can act both as pre- and prohapten.</p>
4-TERT-BUTYL CYCLOHEXYL ACETATE & 2-TERT-BUTYL CYCLOHEXYL ACETATE	<p>There are no safety concerns regarding cyclic acetates under the present declared levels of use, for the reasons outlined below. Cyclic acetates have low acute toxicity. Cyclic acetates and cyclic alcohols also have low whole-body toxicity, after repeated application to skin. At concentrations encountered in current use, minimal, if any, skin irritation occurs. These substances have little or no sensitizing potential. Available data does not indicate that these substances cause genetic toxicity or mutations, so they are unlikely to cause cancer. They have a very wide safety margin.</p>
2-ACETYL-1,2,3,4,6,7,8-OCTAHYDROTETRAMETHYLNAPHTHALENE & ISOCYCLEMONE E & PIPERONYL PROPANAL & 6,7-DIHYDRO-1,1,2,3,3-PENTAMETHYL-4(5H)-INDANONE & COUMARIN	<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. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p>
2-ACETYL-1,2,3,4,6,7,8-OCTAHYDROTETRAMETHYLNAPHTHALENE & ISOCYCLEMONE E	<p>The substance is an individual isomer of the fragrance ingredient OTNE [predominant isomer: 1-(1,2,3,4,5,6,7,8-octahydro-2,3,8,8-tetramethyl-2-naphthyl)ethan-1-one; synonyms - tetramethylacetyl octahydronaphthalene, Iso-E Super; other isomers: 1-(1,2,3,4,5,6,7,8-octahydro-2,3,8,8,-tetramethyl-2-naphthyl)ethan-1-one, and 1,2,3,4,5,6,7,8-octahydro-2,3,8,8-tetramethyl-2-acetonaphthalenone].</p> <p>A synthetic terpenoid considered to be a petroleum-derived aroma chemical</p> <p>No data were available regarding chemical disposition, metabolism, or toxicokinetics; acute, short term, subchronic, or chronic toxicity; synergistic or antagonistic activity; reproductive or teratological effects; carcinogenicity; genotoxicity; or immunotoxicity of OTNE</p> <p>Several compounds were considered as structural analogues of OTNE. Data are provided for the tetralin derivatives AHTN (CAS RN: 21145-77-7; Tonalide, 1-(5,6,7,8-tetrahydro-3,5,5,6,8,8 hexamethyl-2-naphthalenyl)ethanone) and AETT, (*CAS RN: 88-29-9; Versalide, 1-(3-ethyl-5,6,7,8-tetrahydro-5,5,8,8 tetramethyl-2-naphthalenyl)ethanone) which are also polycyclic synthetic musks. Both compounds have been detected in human adipose tissue and human milk. In one rat study, AHTN produced acute hepatic damage but in another had no adverse effects when administered to lactating rats beginning the third week of pregnancy at doses producing levels in the milk ~1000 times those reported in human milk.</p> <p>Administered by gavage at 50 mg/kg/day on gestation days 7 through 17, AHTN produced clinical signs and reduced weight gain and feed consumption in dams but had no adverse effect on embryo-fetal viability, growth, or morphology. In female rats, AETT induced classic degenerative changes in the liver and effects on the nucleolus and was neurotoxic. Effects included demyelination, hyperirritability, limb weakness, and gait abnormality that became severe ataxia.</p> <p>AHTN gave negative results in several genotoxicity studies (e.g., the Salmonella typhimurium/Escherichia coli plate incorporation and liquid preincubation assays and in vivo mouse micronucleus assays)</p> <p>Human Data is available ISO-E super (CAS RN: 54464-57-2): In dermatological patients, two cases of an allergic reaction towards Iso-E Super were observed on day 3 or 4 of application (patch test); however, this was not proved to be clinically relevant.</p> <p>Chronic exposure may result in permanent hypersensitivity] In a study with female mice, Iso E Super was positive in the local lymph node assay (LLNA) and irritancy assay (IRR), but negative in the mouse ear swelling test (MEST).</p> <p>The alkyl cyclic ketone (ACK) fragrance ingredients are a diverse group of structures with similar metabolic and toxicity profiles. ACK fragrance materials have low acute toxicity. Repeated exposure causes some adverse effects in biochemical tests and blood cell counts. They are not considered to be irritating to the skin of humans. In animals, mild to moderate eye irritation was seen; however, full recovery usually occurred. Human studies showed that ACK fragrance ingredients have low potential for sensitization. Phototoxicity and photosensitization were not demonstrated in humans. Developmental toxicity occurred only when toxicity also appeared in the mother. Tests showed that this group of substances did not cause genetic toxicity.</p>
PIPERONYL PROPANAL & 6,7-DIHYDRO-1,1,2,3,3-PENTAMETHYL-4(5H)-INDANONE	* IFF MSDS

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✓	STOT - Repeated Exposure	✗

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Mutagenicity X

Aspiration Hazard X

Legend: X – Data either not available or does not fill the criteria for classification  
✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

SPE003 Sphere Ocean Splash	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
dodecane, isomers	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	>0.0028mg/L	2
	EC50	48	Crustacea	>1-mg/L	2
	EC50	72	Algae or other aquatic plants	>0.0225mg/L	2
NOEC	504	Crustacea	0.011mg/L	2	
dihydromyrcenol	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	27.8mg/L	2
	EC50	48	Crustacea	38mg/L	2
	EC50	72	Algae or other aquatic plants	65mg/L	2
NOEC	96	Fish	<3.5mg/L	2	
4-tert-butylcyclohexyl acetate	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	8.6mg/L	2
	EC50	48	Crustacea	5.3mg/L	2
	EC50	72	Algae or other aquatic plants	22mg/L	2
NOEC	72	Algae or other aquatic plants	6.8mg/L	2	
isolongifolanone	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50	48	Crustacea	5.3mg/L	2
	EC50	72	Algae or other aquatic plants	7.5mg/L	2
NOEC	72	Algae or other aquatic plants	3.7mg/L	2	
2-tert-butylcyclohexyl acetate	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	5.6mg/L	2
	EC50	48	Crustacea	17mg/L	2
	EC50	72	Algae or other aquatic plants	4.2mg/L	2
	EC10	792	Fish	0.91mg/L	2
NOEC	72	Algae or other aquatic plants	0.57mg/L	2	
2-acetyl-1,2,3,4,6,7,8-octahydrotetramethylnaphthalene	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
formaldehyde cyclododecyl ethyl acetal	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	1.9mg/L	2
	EC50	48	Crustacea	1.6mg/L	2
	EC50	72	Algae or other aquatic plants	>2mg/L	2
	EC10	72	Algae or other aquatic plants	0.62mg/L	2
NOEC	48	Crustacea	0.68mg/L	2	
isocyclemone E	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available
piperonyl propanal	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	5.3mg/L	2
	EC50	48	Crustacea	8.3mg/L	2
	EC50	72	Algae or other aquatic plants	14mg/L	2
	EC0	48	Crustacea	2.9mg/L	2
NOEC	96	Fish	2.4mg/L	2	

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6,7-dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	2.12mg/L	2
	EC50	48	Crustacea	1.5mg/L	2
	EC50	72	Algae or other aquatic plants	6.6mg/L	2
	NOEC	72	Algae or other aquatic plants	1.4mg/L	2

cedryl methyl ether	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	0.43mg/L	2
	EC50	48	Crustacea	0.48mg/L	2
	EC50	72	Algae or other aquatic plants	1mg/L	2
	EC10	72	Algae or other aquatic plants	0.13mg/L	2
NOEC	72	Algae or other aquatic plants	0.12mg/L	2	

coumarin	Endpoint	Test Duration (hr)	Species	Value	Source
	LC50	96	Fish	1.324mg/L	2
	EC50	48	Crustacea	8.012mg/L	2
	EC50	96	Algae or other aquatic plants	1.452mg/L	2
NOEC	72	Algae or other aquatic plants	0.431mg/L	2	

**Legend:** Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - 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

Harmful 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.

**DO NOT discharge into sewer or waterways.**

**Persistence and degradability**

Ingredient	Persistence: Water/Soil	Persistence: Air
dihydromyrcenol	HIGH	HIGH
4-tert-butylcyclohexyl acetate	HIGH	HIGH
isolongifolanone	HIGH	HIGH
2-tert-butylcyclohexyl acetate	HIGH	HIGH
formaldehyde cyclododecyl ethyl acetal	HIGH	HIGH
piperonyl propanal	HIGH	HIGH
cedryl methyl ether	HIGH	HIGH
coumarin	LOW	LOW

**Bioaccumulative potential**

Ingredient	Bioaccumulation
dihydromyrcenol	LOW (LogKOW = 3.4666)
4-tert-butylcyclohexyl acetate	MEDIUM (LogKOW = 4.4225)
isolongifolanone	MEDIUM (LogKOW = 3.8144)
2-tert-butylcyclohexyl acetate	MEDIUM (LogKOW = 4.4225)
formaldehyde cyclododecyl ethyl acetal	HIGH (LogKOW = 4.5302)
piperonyl propanal	LOW (LogKOW = 2.5125)
cedryl methyl ether	HIGH (LogKOW = 5.0251)
coumarin	LOW (LogKOW = 1.39)

**Mobility in soil**

Ingredient	Mobility
dihydromyrcenol	LOW (KOC = 54.78)
4-tert-butylcyclohexyl acetate	LOW (KOC = 517.4)
isolongifolanone	LOW (KOC = 1835)
2-tert-butylcyclohexyl acetate	LOW (KOC = 528.1)
formaldehyde cyclododecyl ethyl acetal	LOW (KOC = 111.3)
piperonyl propanal	LOW (KOC = 56.07)
cedryl methyl ether	LOW (KOC = 3484)
coumarin	LOW (KOC = 146.1)

## SECTION 13 Disposal considerations

### Waste treatment methods

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ Recycle wherever possible.</li> <li>▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material)</li> <li>▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</li> </ul>
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Ensure that the hazardous substance is disposed in accordance with the Hazardous Substances (Disposal) Notice 2017

### Disposal Requirements

Packages that have been in direct contact with the hazardous substance must be only disposed if the hazardous substance was appropriately removed and cleaned out from the package. The package must be disposed according to the manufacturer's directions taking into account the material it is made of. Packages which hazardous content have been appropriately treated and removed may be recycled.

The hazardous substance must only be disposed if it has been treated by a method that changed the characteristics or composition of the substance and it is no longer hazardous. Only dispose to the environment if a tolerable exposure limit has been set for the substance.

Only deposit the hazardous substance into or onto a landfill or sewage facility or incinerator, where the hazardous substance can be handled and treated appropriately.

## SECTION 14 Transport information

### Labels Required

<b>Marine Pollutant</b>	NO
<b>HAZCHEM</b>	Not Applicable

**Land transport (UN): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**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

This substance is to be managed using the conditions specified in an applicable Group Standard

HSR Number	Group Standard
HSR002578	Food Additives and Fragrance Materials (Subsidiary Hazard) Group Standard 2017

#### dodecane, isomers is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

#### dihydromyrcenol is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

#### 4-tert-butylcyclohexyl acetate is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

#### isolongifolanone is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

#### 2-tert-butylcyclohexyl acetate is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

#### 2-acetyl-1,2,3,4,6,7,8-octahydrotetramethylnaphthalene is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

#### formaldehyde cyclododecyl ethyl acetal is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

#### isocyclemone E is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

#### piperonyl propanal is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

#### 6,7-dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

#### cedryl methyl ether is found on the following regulatory lists

New Zealand Inventory of Chemicals (NZIoC)

#### coumarin is found on the following regulatory lists

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs  
 New Zealand Approved Hazardous Substances with controls  
 New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals

New Zealand Hazardous Substances and New Organisms (HSNO) Act - Classification of Chemicals - Classification Data  
 New Zealand Inventory of Chemicals (NZIoC)

#### Hazardous Substance Location

Subject to the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Hazard Class	Quantity (Closed Containers)	Quantity (Open Containers)
Not Applicable	Not Applicable	Not Applicable

#### Certified Handler

Subject to Part 4 of the Health and Safety at Work (Hazardous Substances) Regulations 2017.

Class of substance	Quantities
Not Applicable	Not Applicable

Refer Group Standards for further information

#### Tracking Requirements

Not Applicable

#### National Inventory Status

National Inventory	Status
Australia - AIIC	No (dodecane, isomers)
Australia Non-Industrial Use	No (dodecane, isomers; dihydromyrcenol; 4-tert-butylcyclohexyl acetate; isolongifolanone; 2-tert-butylcyclohexyl acetate; 2-acetyl-1,2,3,4,6,7,8-octahydro-1,1,2,3,3-pentamethyl-4(5H)-indanone; formaldehyde cyclododecyl ethyl acetal; isocyclemone E; piperonyl propanal; 6,7-dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone; cedryl methyl ether; coumarin)
Canada - DSL	Yes
Canada - NDSL	No (dodecane, isomers; dihydromyrcenol; 4-tert-butylcyclohexyl acetate; 2-tert-butylcyclohexyl acetate; 2-acetyl-1,2,3,4,6,7,8-octahydro-1,1,2,3,3-pentamethyl-4(5H)-indanone; formaldehyde cyclododecyl ethyl acetal; isocyclemone E; piperonyl propanal; 6,7-dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone; cedryl methyl ether; coumarin)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	No (dodecane, isomers; 2-acetyl-1,2,3,4,6,7,8-octahydro-1,1,2,3,3-pentamethyl-4(5H)-indanone; formaldehyde cyclododecyl ethyl acetal; isocyclemone E; 6,7-dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone)
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	No (dodecane, isomers)
Taiwan - TCSI	Yes
Mexico - INSQ	No (dodecane, isomers; isolongifolanone; formaldehyde cyclododecyl ethyl acetal)
Vietnam - NCI	Yes
Russia - ARIPS	No (dodecane, isomers; isolongifolanone; 6,7-dihydro-1,1,2,3,3-pentamethyl-4(5H)-indanone; cedryl methyl ether)
<b>Legend:</b>	<i>Yes = All CAS declared ingredients are on the inventory        No = One or more of the CAS listed ingredients are not on the inventory and are not exempt from listing (see specific ingredients in brackets)</i>

#### SECTION 16 Other information

<b>Revision Date</b>	18/09/2020
<b>Initial Date</b>	15/09/2020

#### SDS Version Summary

Version	Issue Date	Sections Updated
3.1.1.1	18/09/2020	Classification

#### Other information

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 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

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