

MATERIAL SAFETY DATA SHEET

According to Regulation (EU) No 453/2010

SECTION 1 IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name : VECTAIR AIROMA HERBAL FERN BAERO-03
Product code : 1252248

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

Application : SU22 Professional use. For industrial or institutional use. Airfreshener.

1.3. Details of the supplier of the safety data sheet

Supplier : Vectair System LTD
Unit 3, Trident Centre, Armstrong Road
RG248NU BASINGSTOKE, HAMPSHIRE, Great Britain
Telephone : +44 1256 319500
Fax : +44 1256 319520
E-mail : msds@vectair.co.uk
Website : <http://www.vectairsystems.co.uk>

1.4. Emergency telephone number

EMERGENCY TELEPHONE NUMBER, for DOCTORS/FIRE BRIGADE/POLICE only:
GB - Telephone : +44 1256 319500 (During office hours only)

EMERGENCY TELEPHONE NUMBER (for DOCTORS only):
(24/7)

SECTION 2 HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (99/45/EC) : Extremely flammable.
CLP classification (1272/2008/EC) : Aerosols, category 1. Eye irritation, category 2. Specific target organ toxicity after single exposure, category 3. Hazardous to the aquatic environment — Chronic category 3.
Human health hazards : Causes serious eye irritation. May produce an allergic reaction. Exposure to high vapour concentrations may result in a narcotic effect. Use only as directed. Intentional misuse by deliberately concentrating and inhaling contents can be harmful or fatal.
Physical/chemical hazards : Extremely flammable. Keep away from sources of ignition — No smoking. Do not spray on a naked flame or any incandescent material. Do not spray near fire, sources of heat or live electrical equipment. Aerosol may explode from internal pressure build-up when exposed to temperatures exceeding 50 °C.
Environmental hazards : Harmful to aquatic life with long lasting effects.
Other information : Keep out of the reach of children. Caution: Do not breathe spray. Use only in well-ventilated areas. Spray in short intervals for a short period only. Ventilate well after use. Harmful to house pets.

2.2. Label elements

Label elements (99/45/EC):
Hazard symbols :



F+: Extremely flammable

R- and S-phrases : R12 Extremely flammable.

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S2 Keep out of the reach of children.
S16 Keep away from sources of ignition — No smoking.
S23 Aerosol Do not breathe spray.
S51 Use only in well-ventilated areas.

Additional labelling : Important: Pressurized container; protect from sunlight and do not expose to temperatures exceeding 50°C.
Do not pierce or burn, even after use. Do not spray on a naked flame or any incandescent material.

Label elements (1272/2008/EC):

Hazard pictograms :



Signal word : Danger

H- and P-phrases : H222 Extremely flammable aerosol.
H229 Pressurised container: May burst if heated.
H412 Harmful to aquatic life with long lasting effects.
EUH208 Contains ... May produce an allergic reaction. Reference is made to additional labelling for full text of EUH208*.
P251 Do not pierce or burn, even after use.
P410+P412 Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P211 Do not spray on an open flame or other ignition source.

Additional labelling (99/45/EC and/or 1272/2008/EC)

- : * Contains d-Limonene Pentadecan-15-olide Citronellol 7-Hydroxycitronellal alpha-Hexylcinnamaldehyde Geranyl acetate Pin-2(3)-ene May produce an allergic reaction.
- : Where the mixture is labelled in accordance with Regulation (EC) No 1272/2008 (CLP) the packaging shall (also) carry the text: Contains: Propan-2-ol
- : 3 % of the mixture consists of ingredient(s) of unknown acute inhalation toxicity.

2.3. Other hazards

Other information : The classification of this product is based on the non-aerosolised form of the mixture (on basis of section 1.1.3.7. of Regulation (EC) No 1272/2008). The product does not need to carry all label elements required by Article 17 of Regulation (EC) No 1272/2008 on the basis of Annex I, point 1.5.2.1. Exemption for packages where the contents do not exceed 125 ml. Does not contain PBT or vPvB substances in concentrations higher than 0,1%.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

3.2. Mixtures

Product description : Mixture.

Information on hazardous substances:

Substance name	Concentration (w/w) (%)	CAS nr.	EC number	Symbols	R-phrases
Isobutane	25 - 50	75-28-5	200-857-2	F+	12
Ethanol	10 - < 20	64-17-5	200-578-6	F	11
Propan-2-ol	5 - < 10	67-63-0	200-661-7	F; Xi	11-36-67
Propane	5 - < 10	74-98-6	200-827-9	F+	12
Propyleneglycol	5 - < 10	57-55-6	200-338-0	----	----
Butane	1 - < 5	106-97-8	203-448-7	F+	12
1,4-Dioxacycloheptadecane-5,17-dione	1 - < 5	105-95-3	203-347-8	N	51/53
Linalyl acetate	0,1 - < 1	115-95-7	204-116-4	Xi	38

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d-Limonene	0,1 - < 1	5989-27-5	227-813-5	Xi; N	10-38-43-50/53-65
Pentadecan-15-olide	0,1 - < 1	106-02-5	203-354-6	Xi	43
2'-Acetonaphnone	0,1 - < 1	93-08-3	202-216-2	N	51/53
Citronellol	0,1 - < 1	106-22-9	203-375-0	Xi; N	38-43-51/53
7-Hydroxycitronellal	< 0,1	107-75-5	203-518-7	Xi	36-43
alpha-Hexylcinnamaldehyde	< 0,1	101-86-0	202-983-3	Xi	38-43
Oxacyclohexadecen-2-one	< 0,1	34902-57-3	609-040-9	N	50/53
Geranyl acetate	< 0,1	105-87-3	203-341-5	Xi; N	38-43-51/53
Pin-2(3)-ene	< 0,1	80-56-8	201-291-9	Xn	10-38-43-65

Reference is made to chapter 16 for full text of each relevant R phrase. Occupational exposure limit(s), if relevant, are listed in section 8.

Substance name	REACH nr.	Hazard Class	Pictograms	H-phrases
Isobutane	01-2119485395-27	Flam. Gas 1; Press. Gas	GHS02; GHS04	H220; H280
Ethanol	01-2119457610-43	Flam. Liq. 2; Eye Irrit. 2	GHS02; GHS07	H225; H319
Propan-2-ol	01-2119457558-25	Flam. Liq. 2; Eye Irrit. 2; STOT SE 3	GHS02; GHS07	H225; H319; H336
Propane	01-2119486944-21	Flam. Gas 1; Press. Gas	GHS02; GHS04	H220; H280
Propyleneglycol	01-2119456809-23	-----	-----	-----
Butane	01-2119474691-32	Flam. Gas 1; Press. Gas	GHS02; GHS04	H220; H280
1,4-Dioxacycloheptadecane-5,17-dione		Aquatic Chronic 2	GHS09	H411
Linalyl acetate	01-2119454789-19	Skin Irrit. 2; Eye Irrit. 2	GHS07	H315; H319
d-Limonene	01-2119529223-47	Flam. Liq. 3; Skin Irrit. 2; Skin Sens. 1B; Asp. Tox. 1; Aquatic Acute 1; Aquatic Chronic 1	GHS02; GHS07; GHS09; GHS08	H226; H304; H315; H317; H410
Pentadecan-15-olide	01-2119987323-31	Skin Sens. 1B; Aquatic Chronic 2	GHS07; GHS09	H317; H411
2'-Acetonaphnone		Aquatic Chronic 2	GHS09	H411
Citronellol	01-2119453995-23	Eye Irrit. 2; Skin Irrit. 2; Skin Sens. 1B	GHS07	H319; H317; H315
7-Hydroxycitronellal		Skin Sens. 1; Eye Irrit. 2	GHS07	H317; H319
alpha-Hexylcinnamaldehyde	01-2119533092-50	Skin Sens. 1B	GHS07	H317
Oxacyclohexadecen-2-one	01-0000016883-62	Aquatic Acute 1; Aquatic Chronic 1	GHS09	H410
Geranyl acetate	01-2119973480-35	Skin Irrit. 2; Skin Sens. 1; Aquatic Chronic 3	GHS07	H315; H317; H412
Pin-2(3)-ene	01-2119519223-49	Flam. Liq. 3; Skin Sens. 1; Asp. Tox. 1; Skin irrit 2	GHS07; GHS08; GHS02	H226; H317; H315; H304

Reference is made to chapter 16 for full text of each relevant H phrase.

SECTION 4 FIRST-AID MEASURES

4.1. Description of first aid measures

First aid measures

- Inhalation : Move victim into fresh air. Consult a doctor if victim feels unwell.
- Skin contact : Take off contaminated clothing. Wash off skin with plenty of water and soap before product dries up. Consult a doctor if irritation occurs.
- Eye contact : Wash out with (lukewarm) water for at least 15 minutes. Remove contact lenses. Consult a doctor.
- Ingestion : Aerosol/mist: Ingestion is unlikely to occur.

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

Effects and symptoms

- Inhalation : May cause headache, dizziness and a feeling of sickness. May cause irritation to respiratory airways and coughing.

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Skin contact : May produce an allergic reaction. May cause dry skin and redness.
Eye contact : Irritant. May cause redness and pain.
Ingestion : Aerosol/mist: Ingestion is unlikely to occur.

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

Note to physicians : None known.

SECTION 5 FIRE-FIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media

Suitable : Carbondioxide (CO₂). Alcohol resistant foam. Dry chemical. Water fog.
Not suitable : Water jet.

5.2. Special hazards arising from the substance or mixture

Special exposure hazards : Aerosol may explode from internal pressure build-up when exposed to temperatures exceeding 50 °C. Do not expose emergency personnel to overheated aerosol containers. Water may be used to cool container and prevent explosion of the aerosol.

Hazardous thermal decomposition products : Carbon monoxide may be evolved if incomplete combustion occurs.

5.3. Advice for firefighters

Special protective equipment for fire-fighters : Fight a fire where aerosols are involved from a protected position. Use adequate respiratory equipment in case of insufficient ventilation.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Personal precautions : Danger of slipping. Clean up spills immediately. Wear shoes with non-slip soles. Avoid contact with spilled or released material. Do not breathe vapours and/or spray. Keep away from sources of ignition — No smoking. Build up of highly flammable gasses involves an explosion risk. Vapours are heavier than air. Build up (of gasses) in low areas involves risk of suffocation.

6.2. Environmental precautions

Environmental precautions : Avoid release of product into sewers, surface water and/or ground water.
Other information : Notify authorities if any exposure to the general public or the environment occurs or is likely to occur.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : Collect spilled material in containers. Collect cans in an approved container. Do not pierce aerosols. Wash away remainder with plenty of water and soap.

6.4. Reference to other sections

Reference to other sections : See also section 8.

SECTION 7 HANDLING AND STORAGE

7.1. Precautions for safe handling

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Handling : Handle in accordance with good occupational hygiene and safety practices in well-ventilated areas.
Important: Pressurized container; protect from sunlight and do not expose to temperatures exceeding 50°C.
Do not pierce or burn, even after use. Keep away from sources of ignition — No smoking. Do not spray on a naked flame or any incandescent material. Do not spray near fire, sources of heat or live electrical equipment.
Electrostatic discharge may cause fire. Ensure electrical continuity by bonding and grounding (earthing) all equipment. Do not breathe spray. Do not breathe vapour. Avoid contact with skin and eyes.

7.2. Conditions for safe storage, including any incompatibilities

Storage : Keep frost-free, in a cool (< 35°), dry and well-ventilated place. Protect from sunlight and keep away from heat.
Recommended packaging : Not applicable.

7.3. Specific end use(s)

Use : Use only as directed.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Occupational exposure limits : Occupational exposure limits have not been established for this product. Derived no-effect levels (DNEL) have not been established for this product. Predicted no-effect concentrations (PNEC) have not been established for this product.

Workplace exposure limits (mg/m³):

Chemical name	Country	TWA 8 hour (mg/m ³)	STEL 15 min (mg/m ³)	Comments
Isobutane		1900	2400	
Ethanol	GB	1920	-	-
Ethanol		260	1900	Mac: NL
Propan-2-ol	GB	999	1250	-
Propane		1800	-	-
Propyleneglycol	GB	474	-	Total Vapour and Particulates
Propyleneglycol		474	-	MAC UK: Total Vapour and Particulates
Butane	GB	1450	1810	-
Butane		1450	1810	-
d-Limonene		110	-	MAC: DE, CH, NL

Derived no-effect level (DNEL) for workers:

Chemical name	Route of exposure	DNEL, short-term		DNEL, long-term	
		Local effect	Systemic effect	Local effect	Systemic effect
Ethanol	Dermal				343 mg/kg bw/day
	Inhalation	1900 mg/m ³			950 mg/m ³
Propan-2-ol	Dermal				888 mg/kg bw/day
	Inhalation				500 mg/m ³
Propyleneglycol	Inhalation			10 mg/m ³	168 mg/m ³
Linalyl acetate	Dermal	0,8 mg/kg bw		0,8 mg/kg bw/day	2,5 mg/kg bw/day
	Inhalation				2,75 mg/m ³
d-Limonene	Inhalation				33,3 mg/m ³
Citronellol	Dermal				45,8 mg/kg bw/day
	Inhalation				161,6 mg/m ³
alpha-Hexylcinnamaldehyde	Dermal	0,525 mg/kg bw		0,525 mg/kg bw/day	18,2 mg/kg bw/day
	Inhalation	6,28 mg/m ³			0,078 mg/m ³
Geranyl acetate	Dermal				35,5 mg/kg bw/day
	Inhalation				62,59 mg/m ³
Pin-2(3)-ene	Inhalation				5,98 mg/m ³

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Derived no-effect level (DNEL) for consumers:

Chemical name	Route of exposure	DNEL, short-term		DNEL, long-term	
		Local effect	Systemic effect	Local effect	Systemic effect
Ethanol	Dermal				206 mg/kg bw/day
	Inhalation	950 mg/m ³			114 mg/m ³
	Oral				87 mg/kg bw/day
Propan-2-ol	Dermal				319 mg/kg bw/day
	Inhalation				89 mg/m ³
	Oral				26 mg/kg bw/day
Propyleneglycol	Inhalation			10 mg/m ³	50 mg/m ³
Linalyl acetate	Dermal	0,8 mg/kg bw		0,8 mg/kg bw/day	1,25 mg/kg bw/day
	Inhalation				0,68 mg/m ³
	Oral				0,2 mg/kg bw/day
d-Limonene	Inhalation				8,33 mg/m ³
	Oral				4,76 mg/kg bw/day
Citronellol	Dermal				27,5 mg/kg bw/day
	Inhalation				47,8 mg/m ³
	Oral				13,75 mg/kg bw/day
alpha-Hexylcinnamaldehyde	Dermal	0,0787 mg/kg bw		0,0787 mg/kg bw/day	9,11 mg/kg bw/day
	Inhalation	4,71 mg/m ³			0,019 mg/m ³
	Oral				0,056 mg/kg bw/day
Geranyl acetate	Dermal				17,75 mg/kg bw/day
	Inhalation				15,4 mg/m ³
	Oral				8,9 mg/kg bw/day
Pin-2(3)-ene	Inhalation				1,06 mg/m ³
	Oral				0,31 mg/kg bw/day

Predicted no-effect concentration (PNEC):

Chemical name	Route of exposure	Fresh water		Marine water	
Ethanol	Water	0,96 mg/l		0,79 mg/l	
	Sediment	3,6 mg/kg		2,9 mg/kg	
	Intermittent water				2,75 mg/l
	STP				580 mg/l
	Soil				0,63 mg/kg
	Oral				0,72 mg/kg food
Propan-2-ol	Water	140,9 mg/l		140,9 mg/l	
	Sediment	552 mg/kg		552 mg/kg	
	Intermittent water				140,9 mg/l
	STP				2251 mg/l
	Soil				28 mg/kg
	Oral				160 mg/kg food
Propyleneglycol	Water	260 mg/l		26 mg/l	
	Sediment	572 mg/kg		57,2 mg/kg	
	Intermittent water				183 mg/l
	STP				20000 mg/l
	Soil				50 mg/kg
	Oral				1133 mg/kg food
1,4-Dioxacycloheptadecane-5,17-dione	Water	0,00187 mg/l		0,000187 mg/l	
	Sediment	1,26 mg/kg		0,13 mg/kg	
	Intermittent water				0,0187 mg/l
	STP				124 mg/l
	Soil				0,25 mg/kg
	Oral				33,3 mg/kg food
Linalyl acetate	Water	0,011 mg/l		0,0011 mg/l	
	Sediment	0,609 mg/kg		0,0609 mg/kg	

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d-Limonene	Intermittent water			0,11 mg/l
	STP			10 mg/l
	Soil			0,115 mg/kg
	Water	0,0054 mg/l	0,0005 mg/l	
	Sediment	1,32 mg/kg	0,13 mg/kg	
	STP			1,8 mg/l
Pentadecan-15-olide	Soil			0,262 mg/kg
	Oral			3,33 mg/kg food
	Water	0,0027 mg/l	0,00027 mg/l	
	Sediment	21 mg/kg	4,2 mg/kg	
	STP			10 mg/l
	Soil			10 mg/kg
Citronellol	Water	0,0024 mg/l	0,00024 mg/l	
	Sediment	0,0256 mg/kg	0,00256 mg/kg	
	Intermittent water			0,024 mg/l
alpha-Hexylcinnamaldehyde	STP			580 mg/l
	Soil			0,00371 mg/kg
	Water	0,03 mg/l	0,003 mg/l	
	Sediment	47,7 mg/kg	4,77 mg/kg	
	Intermittent water			0,03 mg/l
	STP			10 mg/l
Geranyl acetate	Soil			9,51 mg/kg
	Oral			6,6 mg/kg food
	Water	0,00372 mg/l	0,000372 mg/l	
	Sediment	0,442 mg/kg	0,442 mg/kg	
	Intermittent water			0,0372 mg/l
	STP			8 mg/l
Pin-2(3)-ene	Soil			0,0859 mg/kg
	Water	0,004 mg/l	0,0004 mg/l	
	Sediment	1,033 mg/kg	0,103 mg/kg	
	STP			3,26 mg/l
	Soil			0,539 mg/kg
	Oral			1,35 mg/kg food

8.2. Exposure controls

Engineering measures : Use only in well-ventilated areas. Comply with standard precautionary measures for working with chemicals.
Hygienic measures : When using do not eat, drink or smoke.

Personal protective equipment:

The efficiency of personal protective equipment depends among other things on temperature and degree of ventilation. Always get professional advice for the particular local situation.

- Body protection : Use of specific protective industrial clothing is not required under normal conditions of use. In case of large scale exposure wear suitable protective clothing, overalls or suit, and similar boots. Suitable material: butyl. Indication of permeation breakthrough time: not known.
- Respiratory protection : Take care of sufficient ventilation. Wear suitable respiratory protection in case of large scale exposure. Suitable: gas filter type A (brown), class I or higher on e.g. a facemask in accordance with EN 140.
- Hand protection : Under normal conditions of use specific gloves are not required. Wear appropriate gloves in case of frequent or prolonged use and in case of large scale exposure. Suitable material: butyl. ± 0,5 mm. Indication of permeation breakthrough time: not known.
- Eye protection : Wear appropriate safety glasses with side shields, in accordance with EN 166, when there is danger of possible eye contact.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance : Aerosol.

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Colour	: Colourless.	
Odour	: Perfumed.	
Odour threshold	: Not known.	
pH	: Not applicable.	Almost waterfree product.
Solubility in water	: Soluble.	
Partition coefficient (n-octanol/water)	: Not known.	
Flash point	: Not applicable.	Not measurable.
Flammability (solid, gas)	: Extremely flammable.	
Auto ignition temperature	: Not applicable.	Aerosol container explodes before reaching the auto-ignition point.
Boiling point/boiling range	: Not known.	Not measurable.
Melting point/melting range	: < 0 °C	
Explosive properties	:	Pressurised container: May burst if heated.
Explosion limits (in air)	: Not known.	Lower explosion limit in air (%): 1,3 (Butane)
	:	Upper explosion limit in air (%): 19 Ethanol
Oxidising properties	: Not applicable.	Does not contain oxidizing substances.
Decomposition temperature	: Not applicable.	
Viscosity (20°C)	: Not known.	
Viscosity (40°C)	: Not known.	
Vapour pressure (20°C)	: 360000 Pa	
Vapour density (20°C)	: > 1	(air = 1)
Relative density (20°C)	: 0,65 g/ml	
Evaporation rate	: Not known.	(n-butyl acetate = 1)

SECTION 10 STABILITY AND REACTIVITY

10.1. Reactivity

Reactivity : See sub-sections below.

10.2. Chemical stability

Stability : Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reactivity : No other hazardous reactions known.

10.4. Conditions to avoid

Conditions to avoid : Keep away from sources of ignition and sources of heat. See section 7.

10.5. Incompatible materials

Materials to avoid : Not applicable.

10.6. Hazardous decomposition products

Hazardous decomposition products : Not known.

SECTION 11 TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

No toxicological research has been carried out on this product.

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- Acute toxicity : Calculated LC50: > 10 mg/l. Ingredients of unknown toxicity: 3 %. ATE: > 5 mg/l. Low toxicity. Not classified - based on available data, the classification criteria are not met. May cause headache, dizziness and a feeling of sickness. May cause damage to organs. Target organ(s): Central nervous system. Effect(s): Breathing of high vapour concentrations may cause central nervous system (CNS) depression resulting in dizziness, lightheadedness, headache, nausea and loss of coordination. Continued inhalation may result in unconsciousness and death.
- Corrosion/irritation : May cause irritation to respiratory airways and coughing. Not classified - based on available data, the classification criteria are not met.
- Sensitisation : Not classified - based on available data, the classification criteria are not met.
- Carcinogenicity : Not classified - based on available data, the classification criteria are not met.
- Mutagenicity : Does not contain mutagenic substances. Not classified - based on available data, the classification criteria are not met.
- Skin contact
- Acute toxicity : Calculated LD50: > 5000 mg/kg.bw. Ingredients of unknown toxicity: < 1 %. ATE: > 2000 mg/kg.bw. Low toxicity. Not classified - based on available data, the classification criteria are not met.
- Corrosion/irritation : Slight irritation possible. Not classified - based on available data, the classification criteria are not met.
- Sensitisation : May produce an allergic reaction.
- Mutagenicity : Does not contain mutagenic substances. Not classified - based on available data, the classification criteria are not met.
- Eye contact
- Corrosion/irritation : Irritant.
- Ingestion
- Acute toxicity : Aerosol/mist: Ingestion is unlikely to occur. Calculated LD50: > 1179 mg/kg.bw. Ingredients of unknown toxicity: < 1 %. ATE: > 2000 mg/kg.bw. Low toxicity. Not classified - based on available data, the classification criteria are not met. May cause hampered eyesight.
- Corrosion/irritation : Aerosol/mist: Ingestion is unlikely to occur. May cause a feeling of sickness, vomiting and diarrhoea. Not classified - based on available data, the classification criteria are not met.
- Carcinogenicity : Aerosol/mist: Ingestion is unlikely to occur. Not classified - based on available data, the classification criteria are not met.
- Mutagenicity : Aerosol/mist: Ingestion is unlikely to occur. Does not contain mutagenic substances. Not classified - based on available data, the classification criteria are not met.

Toxicological information:

Chemical name	Property		Method	Test animal
Ethanol	Skin irritation	Non-irritant	-----	Rabbit
	LD50 (dermal)	15800 mg/kg bw	-----	Rabbit
	NOAEL (inhalation)	23000 mg/m3		Rat
	NOAEL (oral)	2400 mg/kg bw/d		Rat
	NOAEL (fertility, oral)	20000 mg/kg bw/d	OECD 415	Rat
	Skin sensitisation	Not sensitizing	OECD 406	Guinea pig
	NOAEL (development, oral)	6400 mg/kg bw/d		
	LD50 (oral)	10470 mg/kg bw	OECD 401	Rat
	LC50 (inhalation)	> 99999 mg/m3	OECD 403	Rat
	Eye irritation	Irritant	OECD 405	Rabbit
	NOEL (carcinogenicity, oral)	> 4400 mg/kg bw/d		Mouse
	Genotoxicity - in vivo	Not genotoxic	OECD 478	Mouse
	NOEL (carcinogenicity, inh.)	13 mg/m3		
	Genotoxicity - in vitro	Not genotoxic	OECD 476	
Mutagenicity	Negative	OECD 471	Salmonella typhimurium	
Propan-2-ol	NOAEL (oral)	870 mg/kg bw/d	-----	Rat
	LD50 (oral)	4396 mg/kg bw	-----	Rat
	LD50 (dermal)	12800 mg/kg bw	-----	Rat
	LC50 (inhalation)	46600 mg/m3	-----	Rat

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d-Limonene	Skin irritation	Slightly irritant	OECD 404	Rabbit
	Eye irritation	Irritant	OECD 405	Rabbit
	NOAEL (fertility, oral)	407 mg/kg bw/d		Rat
	NOAEL (development, oral)	400 mg/kg bw/d		Rat
	NOEL (carcinogenicity, oral)	Not carcinogenic	OECD 416	Rat
	Skin sensitisation	Not sensitizing	OECD 406	Guinea pig
	Mutagenicity	Negative	OECD 471	
	NOAEL (inhalation)	12500 mg/m3	OECD 451	Rat
	Genotoxicity - in vivo	Not genotoxic	OECD 474	Mouse
	NOEL (carcinogenicity, inh.)	12500 mg/m3		Mouse
	Genotoxicity - in vitro	Not genotoxic	OECD 476	
	NOEL (carcinogenicity) - estimate	Not carcinogenic	-----	-----
	NOEL (carcinogenicity, oral)	> 75 mg/kg bw/d	OECD 451	Rat
	LC50 (inhalation) - estimate	> 5000 mg/m3	-----	-----
	Genotoxicity - in vivo	> 2000 mg/kg bw/d		Rat
	Eye irritation	Non-irritant	OECD 405	Rabbit
	Mutagenicity	Negative	OECD 471	
	Skin sensitisation	10075 ug/cm2	OECD 429	Mouse
	NOAEL (development, oral)	600 mg/kg bw/d		Rat
	Pentadecan-15-olide	Skin irritation	Irritant	-----
NOAEL (oral)		30 mg/kg bw/d		Rat
NOEL (oral)		5 mg/kg bw/d	-----	Rat
LD50 (dermal)		> 2000 mg/kg bw	-----	Rabbit
LD50 (oral)		4400 mg/kg bw	-----	Rat
Genotoxicity - in vitro		Not genotoxic		
LD50 (dermal)		> 5000 mg/kg bw	-----	Rabbit
LD50 (oral)		> 5000 mg/kg bw	-----	Rat
Genotoxicity - in vivo		> 1600 mg/kg bw/d		Mouse
Genotoxicity - estimate		Not genotoxic		
Skin sensitisation		5450 ug/cm2	OECD 429	Mouse
Mutagenicity		Negative	OECD 471	Salmonella typhimurium
NOAEL (oral) - estimate		> 1000 mg/kg bw/d	Read across	Rat
NOAEL (development) - estimate		> 1000 mg/kg.d	Read across	Rat
NOAEL (fertility) - estimate	> 1000 mg/kg.d	Read across	Rat	
Citronellol	Skin irritation	Non-irritant	Patch test	Human
	Skin irritation	Slightly irritant	OECD 404	Rabbit
	Eye irritation	Moderately irritant		Rabbit
	Skin irritation	Moderately irritant	Patch test	Human
	NOAEL (developmental toxicity, dermal)	> 300 mg/kg bw/d	OECD 421	Rat
	NOAEL (fertility, dermal)	300 mg/kg bw/d	OECD 421	Rat
	LD50 (dermal)	2650 mg/kg bw		Rabbit
	LD50 (oral)	3450 mg/kg bw	-----	Rat
	Skin irritation	Moderately irritant		Rabbit
	NOAEL (oral)	> 50 mg/kg bw/d		Rat
	Mutagenicity	Not mutagenic	OECD 471	Salmonella typhimurium
	Skin sensitisation	10875 ug/cm2	OECD 429	Mouse
	7-Hydroxycitronellal	Genotoxicity - in vitro	Not genotoxic	
Skin irritation		Irritant		

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alpha-Hexylcinnamaldehyde	LD50 (dermal)	> 2000 mg/kg bw	-----	Rabbit	
	Skin sensitisation	5612 ug/cm2	OECD 429	Mouse	
	Skin irritation	850 ug/cm2	OECD 404		
	Eye irritation	Irritant			
	Skin irritation	Non-irritant			
	LD50 (oral)	> 5000 mg/kg bw	-----	Rat	
	NOEL (oral)	250 mg/kg bw/d			
	Genotoxicity - in vivo	Not genotoxic		Mouse	
	NOEL (carcinogenicity) - estimate	Not carcinogenic			
	Mutagenicity	Negative	OECD 471	Salmonella typhimurium	
	Genotoxicity - in vivo	Not genotoxic	OECD 474		
	Genotoxicity - in vitro	Not genotoxic	OECD 476		
	NOAEL (oral) - estimate	30 mg/kg bw/d	Read across	Rat	
	LD50 (dermal)	> 3000 mg/kg bw	OECD 402	Rabbit	
	LC50 (inhalation)	> 5000 mg/m3	OECD 403	Rat	
	LD50 (oral)	> 2450 mg/kg bw	OECD 401	Rat	
	Geranyl acetate	Mutagenicity	Negative	OECD 471	Salmonella typhimurium
Skin sensitisation		2372 ug/cm2	OECD 429	Mouse	
Skin irritation		Moderately irritant	OECD 404	Rabbit	
NOAEL (development, oral)		100 mg/kg bw/d	OECD 421	Rat	
Eye irritation		Non-irritant		Rabbit	
NOAEL (dermal)		25 mg/kg bw/d		Rat	
Mutagenicity		Negative	OECD 471	-----	
LD50 (oral)		6330 mg/kg bw	-----	Rat	
LD50 (dermal)		> 5460 mg/kg bw		Rabbit	
Skin irritation		Severely irritant		Rabbit	
NOAEL (dermal) - estimate		1000 mg/kg bw/d	Read across	Mouse	
NOEL (carcinogenicity) - estimate		> 2000 mg/kg.d	Read across	Rat	
Pin-2(3)-ene		NOAEL (oral) - estimate	250 mg/kg bw/d	Read across	
		NOAEL (inhalation)	170 mg/m3	OECD 413	Rat
		LD50 (oral)	3700 mg/kg bw	-----	Rat
		NOAEL (development) - estimate	250 mg/kg.d	Read across	Rat
		Genotoxicity - estimate	Not genotoxic	Read across	
	Eye irritation - estimate	Moderately irritant	Read across	Rabbit	
	Mutagenicity	Not mutagenic	-----	Salmonella typhimurium	
	LD50 (dermal)	> 5000 mg/kg bw	-----	Rabbit	
	Skin sensitisation	Sensitizing.	-----	Guinea pig	
	Skin irritation	Moderately irritant	-----	Rabbit	
	Skin irritation	Non-irritant	-----	Human	

SECTION 12 ECOLOGICAL INFORMATION

12.1. Toxicity

No ecotoxicological research has been carried out on this product.

Ecotoxicity : Harmful to aquatic organisms. Calculated LC50 (fish): 64 mg/l. Calculated EC50 (waterflea): 38 mg/l.
Contains < 1 % of components with unknown hazards to the aquatic environment.

12.2. Persistence and degradability

Persistence – degradability : May cause long-term adverse effects in the aquatic environment.

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12.3. Bioaccumulative potential

Bioaccumulative potential : No specific information known.

12.4. Mobility in soil

Mobility : Not applicable.

12.5. Results of PBT and vPvB ass

PBT/vPvB assessment : Does not contain PBT or vPvB substances in concentrations higher than 0,1%.

12.6. Other adverse effects

Other information : Not applicable.

Ecological information:

Chemical name	Property		Method	Test animal
1,4-Dioxacycloheptadecane-5,17-dione	LC50 (fish)	2,13 mg/l	OECD 203	Brachydanio rerio
	Ultimate aerobic biodegradation (%)	> 60 %	OECD 301 B	
	NOEC (algae)	3,48 mg/l	-----	Desmodesmus subspicatus
	IC50 (algae)	14,58 mg/l	-----	Desmodesmus subspicatus
	EC50 (waterflea)	8,09 mg/l	-----	Daphnia magna
	Log P(ow)	4,3		
	BCF	319,3		
d-Limonene	LC50 (fish)	0,720 mg/l	OECD 203	Pimephales promelas
	EC50 (waterflea)	0,36 mg/l	OECD 202	Daphnia magna
	Ultimate aerobic biodegradation (%)	> 92 %		
	NOEC (waterflea) - chronic	0,15 mg/l.d		Daphnia magna
	Log P(ow)	4,38		
2'-Acetonaphnone	BCF	683		
	LC50 (fish)	9,8 mg/l		Brachydanio rerio
Oxacyclohexadecen-2-one	Log P(ow)	2,9		
	LC50 (fish)	2 mg/l		-----
	EC50 (waterflea)	0,48 mg/l		
	IC50 (algae)	2,4 mg/l		
	Log P(ow)	5,53		

SECTION 13 DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Product residues : Recyclable metal container. Do not puncture or burn even after use. Do not dispose empty pack with waste produced by households. Containers may be recycled. Treat product residues and non-empty pack as hazardous waste.

Additional warning : Residues may cause an explosion hazard. Do not puncture, cut or weld uncleaned drums.

European waste catalogue : Dispose hazardous waste in accordance with Directive 91/689/EEC under acknowledgement of a waste code according to Commission Decision 2000/532/EC to an official chemical waste depot.

Local legislation : Disposal should be in accordance with applicable regional, national, and local laws and regulations. Local regulations may be more stringent than regional or national requirements and must be complied with.

SECTION 14 TRANSPORT INFORMATION

14.1. UN number

UN nr. : UN 1950

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14.2. UN proper shipping name

Transport name : AEROSOLS

14.3/14.4/14.5. Transport hazard class(es)/Packing group/Environmental hazards

ADR/RID/ADN (road/railway/inland waterways)

Class : 2
Classification code : 5F
Packaging group : -
Danger label : 2,1



Other information : Not intended for carriage by inland waterways in tank-vessels.

IMDG (sea)

Class : 2
Packaging group : -
EmS (fire / spill) : F - D / S - U
Marine pollutant : No

IATA (air)

Class : 2

14.6. Special precautions for user

Other information : Country specific variations may apply. It is possible that a "Limited Quantity" exemption applies to the transport of this product.

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Marpol : Not intended to be carried in bulk according to International Maritime Organisation (IMO) instruments. Packaged liquids are not considered bulk.

SECTION 15 REGULATORY INFORMATION

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

Community regulations : Regulation (EC) No 453/2010 (REACH), Regulation (EC) No 1272/2008 (CLP), 75/324/EEC (aerosols) and other regulations.
: In the UK it is recommended that all aerosols should be labelled on the back with the warning about the dangers of volatile solvent abuse. The label should contain the badge 'Solvent Abuse Can Kill Instantly' accompanied by the phrase 'Use only as directed'.

15.2. Chemical safety assessment

Chemical safety assessment : Not applicable.

SECTION 16 OTHER INFORMATION

16.1. Other information

The information in this safety data sheet is compiled in compliance with Regulation (EC) No 453/2010 dated 20 May 2010 and accurate to the best of our knowledge and experience at the date of issue specified. It is the user's obligation to use this product safely and to comply with all

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applicable laws and regulations concerning the use of the product. This safety data sheet complements the technical information sheets but does not replace them and offers no warranty with regard to product properties.

Users are also forewarned for any hazards involved when the product is used for other purposes than those for which it is designed.

Changed or new information with regard to the previous release is indicated with an asterisk (*).

Full text of R-phrases mentioned in section 3:

R10	Flammable.
R11	Highly flammable.
R12	Extremely flammable.
R36	Irritating to eyes.
R38	Irritating to skin.
R43	May cause sensitisation by skin contact.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R65	Harmful: may cause lung damage if swallowed.
R67	Vapours may cause drowsiness and dizziness.

Full text of H-phrases mentioned in section 3:

H220	Extremely flammable gas.
H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H280	Contains gas under pressure; may explode if heated.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful to aquatic life with long lasting effects.

Full text of hazard classes mentioned in section 3:

Flam. Gas 1	: Flammable gas, category 1.
Press. Gas	: Compressed gas.
Flam. Liq. 2	: Flammable liquid, category 2.
Flam. Liq. 3	: Flammable liquid, hazard category 3.
Skin Irrit. 2	: Skin irritation, category 2.
Eye Irrit. 2	: Eye irritation, category 2.
Skin Sens. 1	: Skin sensitization, category 1.
STOT SE 3	: Specific target organ toxicity after single exposure, category 3.
Asp. Tox. 1	: Aspiration hazard, category 1.
Aquatic Chronic 1	: Hazardous to the aquatic environment — Chronic category 1.
Aquatic Chronic 2	: Hazardous to the aquatic environment — Chronic category 2.
Aquatic Acute 1	: Hazardous to the aquatic environment — Acute category 1.

List of abbreviations and acronyms that could be (but not necessarily are) used in this safety data sheet:

ADR	: European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE	: Acute Toxicity Estimate
CLP	: Classification, Labeling & Packaging
CMR	: Carcinogenic, Mutagenic or toxic for Reproduction
EEC	: European Economic Community
IATA	: International Air Transport Association
IBC code	: International Bulk Chemical Code
IMDG	: International Maritime Dangerous Goods Code
LD50/LC50	: Lethal Dose/Concentration for 50% of a population
MAC	: Maximum Allowable Concentration
MARPOL	: International Convention for the Prevention of Pollution From Ships
NO(A)EL	: No Observed (Adverse) Effect Level
OECD	: Organisation for Economic Co-operation and Development

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PBT : Persistent, Bioaccumulative and Toxic
PC : Chemical product category
PT : Product type
REACH : Registration, Evaluation, Authorisation and Restriction of Chemicals
RID : Regulations concerning the International Carriage of Dangerous Goods by Rail
STP : Sewage Treatment Plant
SU : Sector of Use
TWA/STEL : Time-Weighted Average/Short Term Exposure Limit
UN : United Nations
VOC : Volatile Organic Compounds
vPvB : Very Persistent and Very Bioaccumulative

Number format : "," used as decimal separator.

History

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