

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

1.1 Product Identifier: Christmas Spiced Fragrance Candle
0729864

1.2 Uses: Home fragrance

1.3 Supplier: Marks and Spencer plc
PO Box 3339
Chester
CH99 9QS
UK

Telephone: 01342 870900

1.4 Emergency telephone: 01342 870900

2. SECTION 2: Hazards Identification

2.1 Classification of the mixture

GHS/CLP classification according to EC 1272/2008

Hazardous to the aquatic environment, chronic, category 3.	H412:	Harmful to aquatic life with long lasting effects.
	EUH208:	Contains 4-Allyl-2-methoxyphenol, Phenolic aromatic ketonether, 4-Isopropenyl-1-methylcyclohexene, alpha-Hexylcinnamaldehyde.

2.2 Label Elements

Label elements according to EC 1272/2008

2.2.1	Hazard Pictograms:	None required.
2.2.2	Signal Word:	None required.
2.2.3	Named Substances:	None required.
2.2.4	Hazard Statements:	H412: Harmful to aquatic life with long lasting effects. EUH208: Contains 4-Allyl-2-methoxyphenol, Phenolic aromatic ketonether, 4-Isopropenyl-1-methylcyclohexene, alpha-Hexylcinnamaldehyde.
2.2.5	Precautionary Statements:	P273: Avoid release to the environment.
2.2.6	Supplemental Hazard Statements:	None required.
2.3	Other Hazards:	Does not contain any materials classified as PBT or vPvB in accordance with Annex XIII of EC 1907/2006.

3. SECTION 3: Composition/Information on Ingredients

Description of the mixture:

Component	CAS- No.	EC-No.	Index No.	RRN	% w/w	Classification (EC 1272/2008)
2-Methyl-3-phenylpropan-2-yl butyrate	10094-34-5	233-221-8			<1.00000	Aquatic Chronic 2: H411
alpha-Hexylcinnamaldehyde	101-86-0	202-983-3		01-2119533092-50	<1.00000	Skin Sens. 1B: H317 Aquatic Acute 1: H400 Aquatic Chronic 2: H411
Benzyl Benzoate	120-51-4	204-402-9		01-2119976371-33	<1.00000	Acute Tox. 4: H302 Aquatic Chronic 2: H411
Benzyl acetate	140-11-4	205-399-7		01-2119638272-42	<1.00000	Aquatic Chronic 3: H412
4-Isopropenyl-1-methylcyclohexene	5989-27-5	227-813-5	601-029-00-7	01-2119529223-47	<1.00000	Flam. Liq. 3: H226 Asp. Tox. 1: H304 Skin Irrit. 2: H315 Skin Sens. 1B: H317 Aquatic Acute 1: H400 Aquatic Chronic 1: H410
4,11,11-Trimethyl-8-methylenebicyclo[7.2.0]undec-4-ene	87-44-5	201-746-1			<1.00000	Asp. Tox. 1: H304
2-tert-Butylcyclohexyl acetate	88-41-5	201-828-7		01-2119970713-33	<1.00000	Aquatic Chronic 2: H411
4-Allyl-2-methoxyphenol	97-53-0	202-589-1		01-2119971802-33	<1.00000	Skin Sens. 1B: H317 Eye Irrit. 2: H319
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	67845-93-6	267-342-2		01-2119950338-33	0.15000	Aquatic Chronic 2: H411

Phenolic aromatic ketonether	generic name, Application No. 72243-072999, Germany				0.15000	Skin Sens. 1B: H317 Aquatic Chronic 3: H412
Ethyl butyrate	105-54-4	203-306-4			<0.10000	Flam. Liq. 3: H226
Decanal	112-31-2	203-957-4		01-2119967771-26	<0.10000	Eye Irrit. 2: H319
4-Methyl-8-methylenetricyclo[3.3.1.1.(3.7)]decan-2-ol	122760-84-3	406-330-5	603-123-00-3	01-0000015588-59	<0.10000	Skin Irrit. 2: H315 Skin Sens. 1: H317 Aquatic Chronic 2: H411
2-Propenyl hexanoate	123-68-2	204-642-4		01-2119983573-26	<0.10000	Acute Tox. 3: H301 Acute Tox. 3: H311 Acute Tox. 3: H331 Aquatic Acute 1: H400 Aquatic Chronic 3: H412
Octanal	124-13-0	204-683-8			<0.10000	Flam. Liq. 3: H226 Skin Irrit. 2: H315 Eye Irrit. 2: H319 Aquatic Chronic 3: H412
A mixture of branched and linear C7-9 alkyl 3-[3-(2H-benzotriazol-2-yl)-5-(1,1-dimethylethyl)-4-hydroxyphenyl]propionates	127519-17-9	407-000-3	607-281-00-4	01-2120060379-51	<0.10000	Aquatic Chronic 2: H411
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-dioyl)piperidin-1-yl)oxy]octane	129757-67-1	406-750-9		01-0000015625-69	<0.10000	Aquatic Chronic 4: H413
2-Hydroxy-4-Methoxybenzophenone	131-57-7	205-031-5		01-2119976330-39	<0.10000	Skin Irrit. 2: H315 Eye Irrit. 2: H319 STOT SE 3 RTI: H335
(2-methoxymethylethoxy)propanol	34590-94-8	252-104-2		01-2119450011-60	<0.10000	
Allyl (3-methylbutoxy)acetate	67634-00-8	266-803-5			<0.10000	Acute Tox. 4: H302 Skin Irrit. 2: H315
2H-Chromen-2-one	91-64-5	202-086-7		01-2119949300-45	<0.10000	Acute Tox. 4: H302 Skin Sens. 1B: H317 STOT RE 2: H373
2-Hydroxy-4-(octyloxy)benzophenone	1843-05-6	217-421-2		01-2119557833-30	0.07500	Skin Sens. 1B: H317
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	3147-75-9	221-573-5		01-2119971797-16	0.07500	Skin Irrit. 2: H315 Eye Irrit. 2: H319 STOT SE 3 RTI: H335
6,6-Dimethyl-2-methylenebicyclo[3.1.1]heptane	127-91-3	204-872-5		01-2119519230-54	<0.01000	Flam. Liq. 3: H226 Asp. Tox. 1: H304 Skin Irrit. 2: H315 Skin Sens. 1B: H317
2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene	80-56-8	201-291-9			<0.01000	Flam. Liq. 3: H226 Asp. Tox. 1: H304 Skin Irrit. 2: H315 Skin Sens. 1B: H317
1,1'-Oxybenzene	101-84-8	202-981-2		01-2119472545-33	<0.00010	Aquatic Chronic 2: H411
Ethanol	64-17-5	200-578-6	603-002-00-5	01-2119457610-43	<0.00010	Fl. Liq. 2: H225 Eye Irrit. 2: H319

See section 16 for full text of classifications.

4. SECTION 4: First Aid Measures

4.1 Description of first aid measures

Inhalation: Remove victim to fresh air. Keep warm
 Eye Contact: Rinse eyes thoroughly with water. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation persists get medical advice.
 Skin contact: Wash affected area with soap and water.
 Ingestion: Give water to drink. Do not induce vomiting. Get medical attention if symptoms persist.

4.2 Most important symptoms and effects, both acute and delayed

Inhalation: None expected.
 Eye Contact: Possible mild irritation.
 Skin Contact: Possible irritation through repeated contact.
 Ingestion: Possible mild irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Inhalation: See section 4.1
Eye Contact: See section 4.1
Skin Contact: See section 4.1
Ingestion: See section 4.1

5. SECTION 5: Fire fighting measures

- 5.1** Extinguishing media: Carbon dioxide, foam or powder extinguishers.
Do not use water extinguishers.
- 5.2** Special hazards: Do not inhale fumes from combustion.
- 5.3** Advice for fire-fighters: Wear self-contained breathing apparatus.

6. SECTION 6: Accidental release measures

- 6.1** Personal precautions, protective equipment and emergency procedure:
Avoid inhalation and contact with skin and eyes. Use suitable personal protective equipment.
- 6.2** Environmental precautions:
Inform fire brigade of large spillages. Keep away from drains, surface and ground water, and soil. Spillages should be contained immediately by use of sand or inert powder and disposed of in accordance with local regulations.
- 6.3** Methods and material for containment and cleaning up:
Rapidly recover the product. To do so wear suitable personal protective equipment. If possible collect the product for re-use or disposal. Do not allow the material to enter the drainage systems.
- 6.4** Reference to other sections:
See section 8.

7. SECTION 7: Handling and storage

- 7.1** Precautions for safe handling:
Apply good manufacturing and industrial hygiene practices and adequate ventilation.
- 7.2** Conditions for safe storage:
Storage conditions: Store in well-fitted and tightly closed containers; protect from heat and light.
Storage premises: Store in a cool, dry and ventilated area. Keep away from sources of ignition and naked flames.
- 7.3** Incompatible materials: None known.
Specific end use: Home fragrance.

8. SECTION 8: Exposure controls/personal protection

- 8.1** Control parameters

Occupational Exposure Limits

Substance	WEL-STEL mg/m ³	WEL-STEL ppm	WEL_TWA mg/m ³	WEL-TWA ppm
6,6-Dimethyl-2-methylenebicyclo[3.1.1]heptane	300	50	140	25
(2-methoxymethylethoxy)propanol			308	50
Ethanol			1920	1000
2,6,6-Trimethylbicyclo[3.1.1]hept-2-ene	300	50	140	25

DNELs/DMELs

Substance	Type	Exposure	Value	Population	Effects
alpha-Hexylcinnamaldehyde	DNEL	Short term dermal	0.525 mg/cm ²	Workers	Local
alpha-Hexylcinnamaldehyde	DNEL	Short term inhalation	6.28 mg/m ³	Workers	Local
alpha-Hexylcinnamaldehyde	DNEL	Long term dermal	18.2 mg/kg bw/day	Workers	Systemic
alpha-Hexylcinnamaldehyde	DNEL	Long term inhalation	0.078 mg/m ³	Workers	Systemic
alpha-Hexylcinnamaldehyde	DNEL	Long term dermal	0.525 mg/cm ²	Workers	Local

alpha-Hexylcinnamaldehyde	DNEL	Long term inhalation	0.019 mg/m ³	Consumers	Systemic
alpha-Hexylcinnamaldehyde	DNEL	Short term inhalation	4.7 mg/m ³	Consumers	Local
alpha-Hexylcinnamaldehyde	DNEL	Long term dermal	9 mg/kg bw/day	Consumers	Systemic
alpha-Hexylcinnamaldehyde	DNEL	Long term dermal	0.079 mg/cm ²	Consumers	Local
alpha-Hexylcinnamaldehyde	DNEL	Short term dermal	0.079 mg/kg bw/day	Consumers	Local
alpha-Hexylcinnamaldehyde	DNEL	Long term oral	0.056 mg/kg bw/day	Consumers	Systemic
Benzyl benzoate	DNEL	Long term oral	0.4 mg/kg bw/day	Consumers	Systemic
Benzyl benzoate	DNEL	Short term oral	78 mg/kg bw/day	Consumers	Systemic
Benzyl benzoate	DNEL	Long term inhalation	5.1 mg/m ³	Workers	Systemic
Benzyl benzoate	DNEL	Short term inhalation	102 mg/m ³	Workers	Systemic
Benzyl benzoate	DNEL	Long term inhalation	1.25 mg/m ³	Consumers	Systemic
Benzyl benzoate	DNEL	Short term inhalation	25 mg/m ³	Consumers	Systemic
Benzyl benzoate	DNEL	Long term dermal	2.6 mg/kg bw/day	Workers	Systemic
2-Propenyl hexanoate	DNEL	Long term inhalation	15 mg/m ³	Workers	Systemic
2-Propenyl hexanoate	DNEL	Long term dermal	4.3 mg/kg bw/day	Workers	Systemic
2-Propenyl hexanoate	DNEL	Long term dermal	3.7 mg/m ³	Consumers	Systemic
2-Propenyl hexanoate	DNEL	Long term dermal	2.1 mg/kg bw/day	Consumers	Systemic
2-Propenyl hexanoate	DNEL	Long term oral	2.1 mg/kg bw/day	Consumers	Systemic
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	DNEL	Long term inhalation	5.3 mg/m ³	Workers	Systemic
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	DNEL	Long term dermal	1.9 mg/kg bw/day	Workers	Systemic
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	DNEL	Long term inhalation	1.3 mg/m ³	Consumers	Systemic
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	DNEL	Long term dermal	0.9 mg/kg bw/day	Consumers	Systemic
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	DNEL	Long term oral	0.9 mg/kg bw/day	Consumers	Systemic
Benzyl acetate	DNEL	Long term inhalation	21.9 mg/m ³	Workers	Systemic
Benzyl acetate	DNEL	Short term inhalation	43.8 mg/m ³	Workers	Systemic
Benzyl acetate	DNEL	Long term dermal	6.25 mg/kg bw/day	Workers	Systemic
Benzyl acetate	DNEL	Short term	12.5 mg/kg	Workers	Systemic

		dermal	bw/day		
Benzyl acetate	DNEL	Long term inhalation	5.5 mg/m ³	Consumers	Systemic
Benzyl acetate	DNEL	Short term inhalation	11 mg/m ³	Consumers	Systemic
Benzyl acetate	DNEL	Long term dermal	3.125 mg/kg bw/day	Consumers	Systemic
Benzyl acetate	DNEL	Short term dermal	6.25 mg/kg bw/day	Consumers	Systemic
Benzyl acetate	DNEL	Long term oral	3.125 mg/kg bw/day	Consumers	Systemic
Benzyl acetate	DNEL	Short term oral	6.25 mg/kg bw/day	Consumers	Systemic
2-Hydroxy-4-(octyloxy)benzophenone	DNEL	Long term inhalation	6.6 mg/m ³	Workers	Systemic
2-Hydroxy-4-(octyloxy)benzophenone	DNEL	Long term dermal	1.87 mg/kg bw/day	Workers	Systemic
2-Hydroxy-4-(octyloxy)benzophenone	DNEL	Long term inhalation	1.6 mg/m ³	Consumers	Systemic
2-Hydroxy-4-(octyloxy)benzophenone	DNEL	Long term dermal	0.9 mg/kg bw/day	Consumers	Systemic
2-Hydroxy-4-(octyloxy)benzophenone	DNEL	Long term oral	0.9 mg/kg bw/day	Consumers	Systemic
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	DNEL	Long term inhalation	0.7 mg/m ³	Workers	Systemic
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	DNEL	Long term dermal	0.1 mg/kg bw/day	Workers	Systemic
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	DNEL	Long term eye hazard	0.17 mg/m ³	Workers	Local
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	DNEL	Long term dermal	0.1 mg/kg bw/day	Consumers	Systemic
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	DNEL	Long term oral	30 mg/kg bw/day	Consumers	Systemic
Ethanol	DNEL	Short term inhalation	1900 mg/m ³	Workers	Local
Ethanol	DNEL	Long term dermal	343 mg/kg bw/day	Workers	Systemic
Ethanol	DNEL	Long term inhalation	950 mg/m ³	Workers	Systemic
Ethanol	DNEL	Short term inhalation	950 mg/m ³	Consumers	Local
Ethanol	DNEL	Long term dermal	206 mg/kg bw/day	Consumers	Systemic
Ethanol	DNEL	Long term inhalation	114 mg/m ³	Consumers	Systemic
Ethanol	DNEL	Long term oral	87 mg/kg bw/day	Consumers	Systemic
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	DNEL	Long term inhalation	76.48 mg/m ³	Workers	Systemic
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	DNEL	Long term dermal	28.57 mg/kg bw/day	Workers	Systemic
2H-Chromen-2-one	DNEL	Long term inhalation	6.78 mg/m ³	Workers	Systemic
2H-Chromen-2-one	DNEL	Long term dermal	0.39 mg/kg bw/day	Consumers	Systemic
2H-Chromen-2-one	DNEL	Long term inhalation	1.69 mg/m ³	Consumers	Systemic
2H-Chromen-2-one	DNEL	Long term oral	0.39 mg/kg bw/day	Consumers	Systemic
4-Allyl-2-methoxyphenol	DNEL	Long term inhalation	21.2 mg/m ³	Workers	Systemic
4-Allyl-2-methoxyphenol	DNEL	Long term dermal	6 mg/kg bw/day	Workers	Systemic
4-Allyl-2-methoxyphenol	DNEL	Long term inhalation	5.22 mg/m ³	Consumers	Systemic
4-Allyl-2-methoxyphenol	DNEL	Long term dermal	3 mg/kg bw/day	Consumers	Systemic

4-Allyl-2-methoxyphenol	DNEL	Long term oral	3 mg/kg bw/day	Consumers	Systemic
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Substance	Compartment Detail	Value	Method Detail
alpha-Hexylcinnamaldehyde	Fresh water	3 mg/l	
alpha-Hexylcinnamaldehyde	Marine water	0.003 mg/l	
alpha-Hexylcinnamaldehyde	Sewage Treatment Plant	10 mg/l	
alpha-Hexylcinnamaldehyde	Sediment, fresh water	4.7 mg/l	
alpha-Hexylcinnamaldehyde	Sediment, marine water	4.77 mg/l	
alpha-Hexylcinnamaldehyde	Soil	9.51 mg/l	
alpha-Hexylcinnamaldehyde	Secondary poisoning	6.6 mg/l	
Benzyl benzoate	Soil	2.12 mg/kg dwt	
Benzyl benzoate	Sewage Treatment Plant	100 mg/l	
Benzyl benzoate	Sediment, fresh water	10.66 mg/kg wwt	
Benzyl benzoate	Sediment, marine water	1.07 mg/kg wwt	
Benzyl benzoate	Marine water	0.00168 mg/l	
Benzyl benzoate	Fresh water	0.0168 mg/l	
2-Propenyl hexanoate	Fresh water	0.000117 mg/l	
2-Propenyl hexanoate	Sediment, fresh water	0.00446 mg/kg dwt	
2-Propenyl hexanoate	Marine water	0.000012 mg/l	
2-Propenyl hexanoate	Sediment, marine water	0.000446 mg/kg dwt	
2-Propenyl hexanoate	Sewage Treatment Plant	10 mg/l	
2-Propenyl hexanoate	Soil	0.000825 mg/kg dwt	
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	Marine water	0.046 mg/l	Assessment factors
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	Fresh water	0.046 mg/l	Assessment factors
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	Intermittent release	0.046 mg/l	Assessment factors
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	Sewage Treatment Plant	100 mg/l	Assessment factors
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	Sediment, fresh water	46000000 mg/kg dwt	Partition coefficient
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	Sediment, marine water	46000000 mg/kg dwt	Partition coefficient
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	Soil	9170000 mg/kg dwt	Partition coefficient

Benzyl acetate	Fresh water	0.004 mg/l	
Benzyl acetate	Marine water	0.0004 mg/l	
Benzyl acetate	Intermittent release	0.04 mg/l	
Benzyl acetate	Sewage Treatment Plant	8.55 mg/l	
Benzyl acetate	Sediment, fresh water	0.114 mg/kg	
Benzyl acetate	Sediment, marine water	0.0114 mg/kg	
Benzyl acetate	Soil	0.0205 mg/kg	
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	Sewage Treatment Plant	1 mg/l	Assessment factors
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	Soil	10 mg/kg dwt	Assessment factors
Ethanol	Fresh water	0.96 mg/l	
Ethanol	Marine water	0.79 mg/l	
Ethanol	Sediment	3.6 mg/kg	
Ethanol	Soil	0.63 mg/kg	
2H-Chromen-2-one	Fresh water	19 µg/l	Assessment factors
2H-Chromen-2-one	Marine water	1.9 µg/l	Assessment factors
2H-Chromen-2-one	Intermittent release	14.5 µg/l	Assessment factors
2H-Chromen-2-one	Sediment, fresh water	0.15 mg/kg dwt	
2H-Chromen-2-one	Sediment, marine water	0.015 mg/kg dwt	
2H-Chromen-2-one	Soil	0.018 mg/kg dwt	
2H-Chromen-2-one	Sewage Treatment Plant	6.4 mg/l	
4-Allyl-2-methoxyphenol	Fresh water	1.13 µg/l	
4-Allyl-2-methoxyphenol	Marine water	0.113 µg/l	
4-Allyl-2-methoxyphenol	Intermittent release	11.3 µg/l	
4-Allyl-2-methoxyphenol	Sediment, fresh water	0.081 mg/kg	
4-Allyl-2-methoxyphenol	Sediment, marine water	0.0081 mg/kg	
4-Allyl-2-methoxyphenol	Soil	0.0155 mg/kg dwt	

8.2

Exposure controls

Precautionary measures:

Protection for respiratory tract:

Protection for hands:

Protection for eyes:

Protection for skin:

Give adequate ventilation to the premises where the product is stored and/or handled.

Use a suitable air-purifying or air-fed respirator if anticipated exposure levels indicate a possible hazard or exceed safe working limits.

Avoid prolonged or repeated exposure. Use chemically resistant gloves as needed e.g. butyl rubber or nitrile rubber protective index 6.

Avoid contact. Wear safety glasses.

Avoid contact. Use suitable protective clothing as needed.

9. SECTION 9: Physical and chemical properties

9.1

Information on basic physical and chemical properties

Appearance:

White/cream wax.

Odour:

Spiced citrus.

pH:

Not determined, non-aqueous mixture.

Melting point:

≈50°C

Initial boiling point and boiling range:

Not determined.

Flash point:

>70°C

Evaporation rate:

Not determined.

Vapour pressure:

Not determined.

Density:

Not determined.

Solubility in water:

Insoluble.

Partition co-efficient: n-octanol/water:

Not determined.

Auto ignition temperature:

Not determined.

Viscosity:

Not determined.

Explosive properties:

Not applicable.

Oxidising properties:

Not applicable.

9.2

Other information

None

10. SECTION 10: Stability and reactivity

10.1	Reactivity:	None known.
10.2	Chemical stability:	Stable under normal conditions.
10.3	Possibility of hazardous reactions:	None known.
10.4	Conditions to avoid:	Avoid extreme heat and sources of ignition.
10.5	Incompatible materials:	None known.
10.6	Hazardous decomposition products:	Carbon monoxide and unidentified organic compounds may be formed during combustion.

11. SECTION 11: Toxicological information

This preparation has not been subject to toxicological testing as an entity; therefore no specific LD50/LC50 values have been determined. The toxicological information available relating to the ingredients and their concentrations enables the evaluation of this preparation.

11.1 Information on toxicological effects

Acute toxicity

Substance	Result	Species	Dose	Exposure
alpha-Hexylcinnamaldehyde	LC ₅₀ Inhalation Dusts and mists	Rat	>2100 mg/m ³	8 hours
alpha-Hexylcinnamaldehyde	LD ₅₀ Oral	Rat	3100 mg/kg	
Benzyl benzoate	LD ₅₀ Dermal	Rabbit	4 g/kg	
2-Propenyl hexanoate	LD ₅₀ Dermal	Rabbit	820 mg/kg	
2-Propenyl hexanoate	LD ₅₀ Oral	Rat	218 mg/kg	
6,6-Dimethyl-2-methylenebicyclo[3.1.1]heptane	LD ₅₀ Dermal	Rabbit	>5000 mg/kg	
6,6-Dimethyl-2-methylenebicyclo[3.1.1]heptane	LD ₅₀ Oral	Rat	4700 mg/kg	
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	LD ₅₀ Oral	Rat	>2000 mg/kg	
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane	LD ₅₀ Dermal	Rat	>2000 mg/kg	
2-Hydroxy-4-Methoxybenzophenone	LD ₅₀ Oral	Rat	7400 mg/kg	
2-Hydroxy-4-Methoxybenzophenone	LD ₅₀ Dermal	Rabbit	>16000 mg/kg	
Benzyl acetate	LD ₅₀ Dermal	Rabbit	>5 g/kg	
Benzyl acetate	LD ₅₀ Oral	Rat	2490 mg/kg	
2-Hydroxy-4-(octyloxy)benzophenone	LD ₅₀ Oral	Rat	>10000 mg/kg	
2-Hydroxy-4-(octyloxy)benzophenone	LD ₅₀ Dermal	Rabbit	>10000 mg/kg	
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	LD ₅₀ Oral	Rat	>10000 mg/kg	
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	LD ₅₀ Dermal	Rabbit	>5000 mg/kg	
(2-methoxymethylethoxy)propanol	LC ₅₀ Inhalation Vapour	Rat	55 - 60 mg/l	4 hours
(2-methoxymethylethoxy)propanol	LD ₅₀ Dermal	Rabbit	13000 - 14000 mg/kg	
(2-methoxymethylethoxy)propanol	LD ₅₀ Dermal	Rat	9500 mg/kg	
(2-methoxymethylethoxy)propanol	LD ₅₀ Oral	Rat	5135 mg/kg	
Ethanol	LD ₅₀ Oral	Rat	>2000 mg/kg	
Ethanol	LD ₅₀ Dermal	Rabbit	>2000 mg/kg	
Ethanol	LC ₅₀ Inhalation Vapour	Mouse	>20 mg/l	4 hours
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	LD ₅₀ Oral	Rat	>2000 mg/kg	
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	LD ₅₀ Dermal	Rat	>2000 mg/kg	
2-tert-Butylcyclohexyl acetate	LD ₅₀ Dermal	Rabbit	>5000 mg/kg	
2-tert-Butylcyclohexyl acetate	LD ₅₀ Oral	Rat	4600 mg/kg	

2H-Chromen-2-one	LD ₅₀ Oral	Rat	293 mg/kg	
4-Allyl-2-methoxyphenol	LD ₅₀ Oral	Guinea Pig	2130 mg/kg	
4-Allyl-2-methoxyphenol	LD ₅₀ Oral	Mouse	3 g/kg	
4-Allyl-2-methoxyphenol	LD ₅₀ Oral	Rat	2680 mg/kg	

Acute toxicity estimates

Route	ATE Value
Oral	>5000 mg/kg
Dermal	>5000 mg/kg
Inhalation	>20 mg/l/4h

Irritation/Corrosion

Substance	Result	Species	Score	Exposure	Observation
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-dioyl)piperidin-1-yl)oxy]octane	Skin - Irritant	Rabbit	0	4 hours 0.5 ml	Not irritating
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-dioyl)piperidin-1-yl)oxy]octane	Eye - Irritant	Rabbit	0	0.1 ml	Not irritating
2-Hydroxy-4-(octyloxy)benzophenone	Skin - Irritant	Rabbit	0	72 hours 0.5 g	Not irritating
2-Hydroxy-4-(octyloxy)benzophenone	Eyes - Irritant	Rabbit	0.66	24 hours 0.1 g	Not irritating
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	Skin - Irritant	Rabbit	0	24 hours 0.5 g	Not irritating
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	Eye - Irritant	Rabbit	0	0.1g	Not irritating
(2-methoxymethylethoxy)propanol	Eyes - Mild irritant	Human		8 mg	
(2-methoxymethylethoxy)propanol	Eyes - Mild irritant	Rabbit		24 hours 500 mg	
(2-methoxymethylethoxy)propanol	Skin - Mild irritant	Rabbit		500 mg	
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	Skin - Irritant	Rabbit	0	72 hours 0.5 g	Not irritating
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	Eye - Irritant	Rabbit	0	53.8 mg	Not irritating

Sensitization

Substance	Route of exposure	Species	Result
alpha-Hexylcinnamaldehyde	Skin	Mouse	Sensitizing
Benzyl benzoate	Skin	Mouse	Not sensitizing
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-dioyl)piperidin-1-yl)oxy]octane	Skin	Guinea Pig	Not sensitizing
2-Hydroxy-4-Methoxybenzophenone	Skin	Guinea Pig	Not sensitizing
2-Hydroxy-4-(octyloxy)benzophenone	Skin	Guinea Pig	Sensitizing
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	Skin	Guinea Pig	Not sensitizing
Ethanol	Skin	Guinea Pig	Not sensitizing
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	Skin	Mouse	Not sensitizing

Germ cell mutagenicity

Substance	Test	Experiment	Result
alpha-Hexylcinnamaldehyde	OECD 471 Bacterial reverse mutation test	In vitro Bacteria	Negative
alpha-Hexylcinnamaldehyde	OECD 474 Mammalian erythrocyte micronucleus test	In vivo Mammalian-Animal	Negative
Benzyl benzoate	OECD 471 Bacterial reverse mutation test	In vitro Bacteria	Negative
reaction mass of: bis(2,2,6,6-tetramethyl-1-	OECD 473 Mammalian chromosome	In vitro	Negative

octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-dioyl)piperidin-1-yl)oxy]octane	aberration test	Mammalian-Animal	
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-dioyl)piperidin-1-yl)oxy]octane	OECD 471 Bacterial reverse mutation test	In vitro Bacteria	Negative
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-dioyl)piperidin-1-yl)oxy]octane	OECD 474 Mammalian erythrocyte micronucleus test	In vivo Mammalian-Animal	Negative
2-Hydroxy-4-Methoxybenzophenone	OECD 471 Bacterial reverse mutation test	In vitro Bacteria	Negative
2-Hydroxy-4-(octyloxy)benzophenone	OECD 471 Bacterial reverse mutation test	In vitro Bacteria	Negative
2-Hydroxy-4-(octyloxy)benzophenone	OECD 473 Mammalian chromosome aberration test	In vitro Mammalian-Animal	Negative
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	OECD 473 Mammalian chromosome aberration test	In vitro Mammalian-Animal	Negative
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	OECD 476 Mammalian Cell Gene Mutation Tests using the Hprt and xprt genes	In vitro Mammalian-Animal	Negative
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	OECD 471 Bacterial reverse mutation test	In vitro Bacteria	Negative
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	OECD 471 Bacterial reverse mutation test	In vitro Bacteria	Negative
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	OECD 476 Mammalian Cell Gene Mutation Tests using the Hprt and xprt genes	In vitro Mammalian-Animal	Negative
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	SCHMID, W.; The micronucleus test. Mutation Res. 31: 9-15, 1975	In vitro Mammalian-Animal	Negative

Carcinogenicity

Substance	Where listed	Group	Comments
No data available			

Reproductive toxicity

Substance	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
120-51-4	Benzyl benzoate	-	-	-	-	Oral: 646 mg/kg
129757-67-1	reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-dioyl)piperidin-1-yl)oxy]octane	Negative	-	Negative	Rat - Male, Female	Oral: 10 ml/kg
1843-05-6	2-Hydroxy-4-(octyloxy)benzophenone	Negative	Negative	-	Rat - Male, Female	Oral 523.9 mg/kg
1843-05-6	2-Hydroxy-4-(octyloxy)benzophenone	-	-	Negative	Rat - Male, Female	Oral 6000 ppm
67845-93-6	3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	-	Negative	Negative	Rat - Male, Female	Oral 50000 ppm

Specific target organ toxicity

Substance	Exposure	Category	Route	Target organs
64-17-5	Ethanol	Repeated	N/A	Oral

Aspiration hazard

Substance	Result
No data available	

Potential chronic health effects

Substance	Result	Species	Dose	Exposure
alpha-Hexylcinnamaldehyde	Sub-acute NOAEL Oral	Rat	150mg/kg	-
alpha-Hexylcinnamaldehyde	Sub-acute LOAEL	Rat	125 mg/kg	-
Benzyl benzoate	Sub-chronic NOAEL Oral	Rat - Male	800 mg/kg	90 days
Benzyl benzoate	Sub-acute NOAEL Dermal	Rat - Male	781 mg/kg	30 days
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-dioyl)piperidin-1-yl)oxy]octane	Sub-acute NOAEL Oral	Rat	>100 mg/kg	28 days; 7 days/week
2-Hydroxy-4-(octyloxy)benzophenone	Sub-chronic NOAEL Oral	Rat	>1500 ppm	90 days
2-Hydroxy-4-(octyloxy)benzophenone	Sub-acute NOAEL Oral	Rat	>1000 mg/kg	28 days; 7 days/week
2-Hydroxy-4-(octyloxy)benzophenone	Sub-chronic NOAEL Oral	Dog	>6000 ppm	90 days
2-Hydroxy-4-(octyloxy)benzophenone	Chronic NOAEL Oral	Dog	3000 ppm	24 months

General:

Carcinogenicity:

No known significant effects or critical hazards.

Mutagenicity:

No known significant effects or critical hazards.

Teratogenicity:

No known significant effects or critical hazards.

Developmental effects:

No known significant effects or critical hazards.

Fertility effects:

No known significant effects or critical hazards.

Interactive effects:

Not available.

Toxicokinetics

Absorption:

Not available.

Distribution:

Not available.

Metabolism:

Not available.

Elimination:

Not available.

Other information:

Not available.

12. SECTION 12: Ecological information

This product has not been subjected to ecological testing as an entity; therefore no specific values have been determined. The ecological information available relating to the ingredients and their concentrations enables the evaluation of this preparation.

12.1 Toxicity

Substance	Result	Species	Exposure
alpha-Hexylcinnamaldehyde	Acute EC ₅₀ 0.247 mg/l	Daphnia	48 hours
alpha-Hexylcinnamaldehyde	Acute EC ₅₀ 1.7 mg/l	Fish	96 hours
alpha-Hexylcinnamaldehyde	Chronic NOEC 0.065 mg/l	Algae	72 hours
alpha-Hexylcinnamaldehyde	Chronic NOEC 0.069 mg/l Fresh water	Daphnia	21 days
Benzyl benzoate	Acute IC ₅₀ 0.475 mg/l	Algae	72 hours
Benzyl benzoate	Acute LC ₅₀ 3.09 mg/l	Daphnia	48 hours
Benzyl benzoate	Acute LC ₅₀ 2.32 mg/l	Fish	96 hours
Benzyl benzoate	Acute LC ₅₀ 1.4 ppm Fresh Water	Fish - Oncorhynchus mykiss	96 hours
Benzyl benzoate	Chronic NOEC 0.247 mg/l	Algae	72 hours
2-Propenyl hexanoate	Acute EC ₅₀ >4.6 mg/l	Aquatic plants	72 hours
2-Propenyl hexanoate	Acute EC ₅₀ 2 mg/l	Daphnia	48 hours
2-Propenyl hexanoate	Acute LC ₅₀ 0.177 mg/l	Fish	96 hours
2-Propenyl hexanoate	Chronic EC ₁₀ <1 mg/l	Algae	72 hours
2-Propenyl hexanoate	Chronic NOEC <1 mg/l	Algae	72 hours
6,6-Dimethyl-2-methylenebicyclo[3.1.1]heptane	Chronic NOEC 320 µg/l Fresh Water	Fish - Oncorhynchus mykiss	60 days
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate 1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-dioyl)piperidin-1-yl)oxy]octane	Acute LC ₅₀ >58 mg/l Fresh water	Fish	48 hours
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate	Acute EC ₅₀ >100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours

1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane			
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate	Chronic NOEC >10 mg/l	Daphnia - Daphnia magna	21 days
1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane			
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate	Acute EC ₅₀ >2 mg/l Fresh water	Algae	72 hours
1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane			
reaction mass of: bis(2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-1,10-decanedioate	Acute IC ₅₀ >100 mg/l	Micro-organism	3 hours
1,8-bis[(2,2,6,6-tetramethyl-4-((2,2,6,6-tetramethyl-1-octyloxypiperidin-4-yl)-decan-1,10-diyl)piperidin-1-yl)oxy]octane			
2-Hydroxy-4-Methoxybenzophenone	Acute LC ₅₀ 20.4 mg/l	Fish	96 hours
2-Hydroxy-4-Methoxybenzophenone	Acute EC ₅₀ 12.9 mg/l	Daphnia	48 hours
2-Hydroxy-4-Methoxybenzophenone	Acute EC ₅₀ 1.4 mg/l	Algae	72 hours
2-Hydroxy-4-Methoxybenzophenone	Acute EC ₅₀ >10000 mg/l	Micro-organism	30 minutes
Benzyl acetate	Acute EC ₅₀ 17 mg/l	Daphnia	48 hours
Benzyl acetate	Acute EC ₅₀ 855 mg/l	Micro-organisms	3 hours
Benzyl acetate	Acute IC ₅₀ 114 mg/l	Algae	72 hours
Benzyl acetate	Acute LC ₅₀ 4000 µg/l Fresh water	Fish - Oryzias latipes - Juvenile	96 hours
Benzyl acetate	Chronic NOEC 52 mg/l	Algae	72 hours
2-Hydroxy-4-(octyloxy)benzophenone	Acute LC ₅₀ >100 mg/l	Fish - Danio rerio	96 hours
2-Hydroxy-4-(octyloxy)benzophenone	Acute EC ₅₀ >0.0052 mg/l	Daphnia - Daphnia magna	48 hours
2-Hydroxy-4-(octyloxy)benzophenone	Acute EC ₅₀ >100 mg/l	Algae - Desmodesmus subspicatus	72 hours
2-Hydroxy-4-(octyloxy)benzophenone	Acute EC ₅₀ >100 mg/l	Micro-organism	3 hours
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	Acute LC ₅₀ >100 mg/l	Fish - Danio rerio	96 hours
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	Acute EC ₅₀ >100 mg/l	Daphnia - Daphnia magna	48 hours
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	Chronic NOEC >10 mg/l	Daphnia - Daphnia magna	21 days
2-(2H-Benzotriazol-2-yl)-4-(1,1,3,3-tetramethylbutyl)phenol	Acute EC ₅₀ >100 mg/l	Algae - Scenedesmus subspicatus	72 hours
(2-methoxymethylethoxy)propanol	Acute EC ₅₀ 969 mg/l	Algae - Scenedesmus subspicatus	96 hours
(2-methoxymethylethoxy)propanol	Acute LC ₅₀ 1919 mg/l	Daphnia	48 hours
(2-methoxymethylethoxy)propanol	Acute LC ₅₀ >10000 mg/l	Fish - Pimephales promelas	96 hours
Ethanol	Acute LC ₅₀ >100 mg/l	Fish - Leuciscus idus	48 hours
Ethanol	Acute EC ₅₀ >100 mg/l	Daphnia - Daphnia magna	48 hours
Ethanol	Acute EC ₅₀ >100 mg/l	Algae - Selenastrum capricornutum	48 hours
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	Acute LC ₅₀ >0.00045 mg/l	Fish - Cyprinus carpio	96 hours
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	Acute EC ₅₀ 0.30 mg/l	Daphnia - Daphnia magna	48 hours
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	Acute EC ₅₀ >0.0025 mg/l	Algae - Pseudokirchneriella subcapitata	72 hours
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	Acute EC ₅₀ >1000 mg/l	Micro-organism	3 hours
2-tert-Butylcyclohexyl acetate	Acute EC ₅₀ 17 mg/l	Aquatic plants	72 hours
2-tert-Butylcyclohexyl acetate	Acute EC ₅₀ 17 mg/l	Daphnia	48 hours
2-tert-Butylcyclohexyl acetate	Acute LC ₅₀ 1.7 mg/l	Fish	96 hours
2H-Chromen-2-one	Acute EC ₅₀ 1.45 mg/l	Algae	72 hours
2H-Chromen-2-one	Acute LC ₅₀ 2.94 mg/l	Fish	96 hours
2H-Chromen-2-one	Acute LC ₅₀ 13500 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
4-Allyl-2-methoxyphenol	Acute EC ₅₀ 23 mg/l	Aquatic plants	72 hours
4-Allyl-2-methoxyphenol	Acute EC ₅₀ 1.05 mg/l	Daphnia	48 hours
4-Allyl-2-methoxyphenol	Acute LC ₅₀ 24000 µg/l Fresh water	Fish - Pimephales promelas - Juvenile	96 hours

12.2 Persistence and degradability

Substance	Test	Result	Dose	Inoculum
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alpha-Hexylcinnamaldehyde	OECD 301F Ready Biodegradability - Manometric Respirometry Test	97% - Readily - 28 days	-	-
Benzyl benzoate	OECD 301F Ready Biodegradability - Manometric Respirometry Test	94% - Readily - 28 days	-	-
2-Propenyl hexanoate	OECD 301F Ready Biodegradability - Manometric Respirometry Test	70% - Readily - 28 days	-	-
6,6-Dimethyl-2-methylenebicyclo[3.1.1]heptane	OECD 301D Ready Biodegradability - Closed bottle test	1% - Not readily - 28 days	-	-
Benzyl acetate	OECD 301B Ready Biodegradability - CO2 Evolution Test	92% - Readily - 28 days	-	-
2-Hydroxy-4-(octyloxy)benzophenone	OECD 301B Ready Biodegradability - CO2 Evolution Test	6% - Not readily - 28 days	-	-
(2-methoxymethylethoxy)propanol	OECD 301E Ready Biodegradability - Modified OECD Screening Test	>70% - Readily - 28 days	-	-
3,5-di-(t-butyl)-4-hydroxybenzoic acid, hexadecyl ester	OECD 301C Ready Biodegradability - Modified MITI Test (I)	0% - Not readily - 28 days	100 mg/l	Mixed liquor suspended solid
2-tert-Butylcyclohexyl acetate	OECD 301F Ready Biodegradability - Manometric Respirometry Test	43% - Not readily - 28 days	-	-
2H-Chromen-2-one	OECD 301F Ready Biodegradability - Manometric Respirometry Test	90% - Readily - 28 days	-	-
4-Allyl-2-methoxyphenol	OECD 301F Ready Biodegradability - Manometric Respirometry Test	97% - Readily - 28 days	-	-

12.3 Bioaccumulative potential

Substance	LogP _{ow}	BCF	Potential
alpha-Hexylcinnamaldehyde	5.3	6000	high
Benzyl benzoate	3.97	193.4	low
2-Propenyl hexanoate	3.2	102.3	low
6,6-Dimethyl-2-methylenebicyclo[3.1.1]heptane	4.425	1163	high
Benzyl acetate	1.49	8	low
2-Hydroxy-4-(octyloxy)benzophenone	6.416	89 - 190	low
(2-methoxymethylethoxy)propanol	-0.35	-	low
Ethanol	-0.35	-	low
2H-Chromen-2-one	1.39	-	low
4-Allyl-2-methoxyphenol	2.27	-	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}):
Mobility:

Not available.
Not available.

12.5 Results of PBT and vPvB assessment

PBT:
vPvB:

Not applicable.
Not applicable.

12.6 Other adverse effects:

No known significant effects or critical hazards.

13. SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product:

Methods of disposal:

The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of the environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction.

Hazardous waste:

The classification of the product may meet the criteria for a hazardous waste.

European waste catalogue (EWC)

Waste code	Waste designation
20 01 26*	oil and fat other than those mentioned in 20 01 25

Packaging:

Methods of disposal:

The generation of waste should be avoided or minimised where possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions:

This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

14. SECTION 14: Transport information

14.1 ADR/RID

UN Number: Not classified as dangerous for transport.
Class: N/A
Shipping Name: N/A
Packing Group: N/A
Tunnel Code: N/A

14.2 IMDG

Marine Pollutant: No
UN Number: Not classified as dangerous for transport.
Class: N/A
Shipping Name: N/A
Packing Group: N/A
Storage Category: N/A

14.3 IATA

UN Number: Not classified as dangerous for transport.
Class: N/A
Shipping Name: N/A
Label: N/A
Packing Group: N/A
S.P.: N/A
ERG: N/A

14.4 Special precautions for user:

Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or a spillage.

14.5 Transport of bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable.

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation

EU Regulation (EC) No. 1907/2006 (REACH)
Annex XIV – List of substances subject to authorisation

Annex XIV: None of the components are listed.
Substances of very high concern: None of the components are listed.

Annex XVII – Restrictions on manufacture, placing on the market and use of certain dangerous substances, mixtures and articles
Not applicable

Registration status

Australian inventory (AICS): All components are listed.
China inventory (IECSC): All components are listed.
Japan inventory: All components are listed.
Philippines inventory (PICCS): All components are listed.
United States inventory (TSCA 8b): All components are listed.
Europe inventory (EINECS/ELINCS/NLP): All components are listed.
Canada inventory (DSL): All components are listed.

15.2 Chemical safety assessment

No chemical safety assessment has been carried out for this mixture.

16. Other information

Abbreviations and acronyms:

ADR – Accord européen sur le transport des marchandises dangereuses par Route (European agreement concerning the International Carriage of Dangerous Goods by Road)
ATE – Acute Toxicity Estimate
CAS – Chemical Abstracts Service
CLP – Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL – Derived Minimal Effect Level
DNEL – Derived No Effect Level
IATA – International Air Transport Association
IMDG – International Maritime Code for Dangerous Goods
NAOEL – No Observable Adverse Effect Level
PBT – Persistent, Bioaccumulative and Toxic
PNEC – Predicted No Effect Concentration
REACH – Registration, Authorisation and Restriction of Chemicals Regulation [Regulation (EC) No. 1907/2006]
RID – Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
vPvB – Very Persistent and Very Bioaccumulative

Classification Procedure:

Classification according to Regulation (EC) No. 1272/2008	Classification procedure
H412: Harmful to aquatic life with long lasting effects	Calculation
EUH208: Contains 4-Allyl-2-methoxyphenol, Phenolic aromatic ketonether, 4-Isopropenyl-1-methylcyclohexene, alpha-Hexylcinnamaldehyde.	Calculation

Full text of hazard statements (EC 1272/2008) referred to in section 3:

Acute Tox. 3: H301 Acute toxicity, oral, category 3.
Acute Tox. 3: H311 Acute toxicity, dermal, category 3.
Acute Tox. 3: H331 Acute toxicity, inhalation, category 3.
Acute Tox. 4: H302 Acute toxicity, oral, category 4.
Aquatic Acute: H400 Hazardous for the aquatic environment, acute, category 1.
Aquatic Chronic 1: H410 Hazardous for the aquatic environment, chronic, category 1.
Aquatic Chronic 2: H411 Hazardous for the aquatic environment, chronic, category 2.
Aquatic Chronic 3: H412 Hazardous for the aquatic environment, chronic, category 3.
Aquatic Chronic 4: H413 Hazardous for the aquatic environment, chronic, category 4.
Asp. Tox. 1: H304 Aspiration hazard, category 1.
Eye Irrit. 2: H319 Eye irritation, category 2.
Flam. Liq. 2: H225 Flammable liquid and vapour, category 2.
Flam. Liq. 3: H226 Flammable liquid and vapour, category 3.
Skin Irrit. 2: H315 Skin irritation, category 2.
Skin Sens. 1: H317 Skin sensitizer, category 1.
Skin Sens. 1B: H317 Skin sensitizer, category 1B.
STOT RE 2: H373 Specific target organ toxicity, category 2.
STOT SE 3 RTI: H335 Specific target organ toxicity, category 3, respiratory tract irritation.

Full text of classifications (EC 1272/2008) referred to in section 3:

H225:	Highly flammable liquid and vapour.
H226:	Flammable liquid and vapour.
H301:	Toxic if swallowed.
H302:	Harmful if swallowed.
H304:	May be fatal if swallowed and enters airways.
H311:	Toxic in contact with skin.
H315:	Causes skin irritation.
H317:	May cause an allergic skin reaction.
H319:	Causes serious eye irritation.
H331:	Toxic if inhaled.
H335:	May cause respiratory irritation.
H373:	May cause damage to organs through prolonged or repeated exposure.
H400:	Very toxic to aquatic life.
H410:	Very toxic to aquatic life with long-lasting effects.
H411:	Toxic to aquatic life with long-lasting effects.
H412:	Harmful to aquatic life with long-lasting effects.
H413:	May cause long-lasting harmful effects to aquatic life.

Issue number: 1**Changes from previous issue:** New

The information given in this safety data sheet is based on the present state of knowledge and experiences but no guarantee can be given that the information is complete. It is in the customer's own interest to make sure that the information is sufficient for the purpose which the product shall be used. It is the responsibility of the user to fulfil any requirements according to current legislation.

End of Safety Data Sheet