Safety Data Sheet

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This Safety Data Sheet has been prepared in accordance with the Malaysia Occupational Safety and Health (Chemical Classification, Labelling and Safety Data Sheets) Regulations 2013.

SECTION 1: Identification

1.1. Product identifier
3M™ Deodorizer - Fresh Scent - Concentrate (Product No. 13, 3M™ Chemical Management Systems)

Product Identification Numbers
70-0713-1131-3 70-0716-5878-8 70-0716-6115-4 70-0716-8315-8 70-0716-8316-6

1.2. Recommended use and restrictions on use

Recommended use
Deodorizer, Long-lasting deodorizer leaves a fresh, clean scent.

1.3. Supplier's details
ADDRESS: 3M Malaysia Sdn. Bhd., Level 8, Block F, Oasis Square, No.2, Jalan PJU 1A/7A, Ara Damansara 47301 Petaling, Jaya, Selangor
Telephone: 03-7884 2888
E Mail: 3mmyehsr@mmm.com
Website: www.3M.com.my

1.4. Emergency telephone number
+60 03-7884 2888

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture
Acute Toxicity (oral): Category 4.
Skin Corrosion/Irritation: Category 2.
Serious Eye Damage/Irritation: Category 1.
Skin Sensitizer: Category 1.
Chronic Aquatic Toxicity: Category 2.

2.2. Label elements
Signal word
Danger

Symbols
Corrosion |Exclamation mark |Environment |

Pictograms

Hazard Statements:

H302	Harmful if swallowed.
H315	Causes skin irritation.
H318	Causes serious eye damage.
H317	May cause an allergic skin reaction.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention:

P273	Avoid release to the environment.
P280B	Wear protective gloves, eye protection, and face protection.

Response:

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor.
P333 + P313	If skin irritation or rash occurs: Get medical attention.

Disposal:

P501	Dispose of contents and container in accordance with applicable local, regional, national, and international regulations.

2.3. Other hazards

None known

SECTION 3: Composition/information on ingredients

This material is a mixture.

Ingredient	C.A.S. No.	% by Wt
C8-10 Alcohols Ethoxylated Propoxylated	68603-25-8	30 - 60
WATER	7732-18-5	10 - 20
Fragrance Component 18	Trade Secret	< 10
Terpenes and terpenoids, sweet orange-oil	68647-72-3	< 7
Diethyl Phthalate	84-66-2	< 5
2-Phenoxyethanol	122-99-6	< 3
4-T-BUTYLCYCLOHEXYL ACETATE	32210-23-4	1 - 3
Amyl Cinnamal	122-40-7	< 1.5
Amyl Salicylate	2050-08-0	< 1.5
CITRONELLOL	106-22-9	< 1.5
Fragrance Component 2	1222-05-5	< 1.5
Fragrance Component 23	17511-60-3	< 1.5
Hexyl Cinnamal	101-86-0	< 1.5
Hydroxyisohexyl 3-Cyclohexene	31906-04-4	< 1.5

Carboxaldehyde		
Linalool	78-70-6	< 1.5
PHENYLETHANOL	60-12-8	< 1.5
Terpineol	98-55-5	< 1.5
TERPINEOL ACETATE	8007-35-0	< 1.5
Verdyl Acetate	5413-60-5	< 1.5
Fragrance Component 46	Trade Secret	< 1.5
Fragrance Component 6	Trade Secret	< 1.5
Fragrance Component 40	127-91-3	< 0.5
Fragrance Component 45	2705-87-5	< 0.5
COUMARIN	91-64-5	< 0.5
D-LIMONENE	5989-27-5	< 0.3
Benzenepropanal, 4-ethyl-.alpha.,.alpha.-dimethyl-	67634-15-5	< 0.3
Fragrance Component 25	101-84-8	< 0.3
Fragrance Component 30	110-41-8	< 0.3
GERANYL ACETATE	105-87-3	< 0.3
Fragrance Component 32	Trade Secret	< 0.3
Fragrance Component 8	Trade Secret	< 0.3
Fragrance Component 53	Trade Secret	< 0.3

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:
Remove person to fresh air. If you feel unwell, get medical attention.

Skin Contact:
Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:
Immediately flush with large amounts of water for at least 15 minutes. Remove contact lenses if easy to do. Continue rinsing. Immediately get medical attention.

If Swallowed:
Rinse mouth. If you feel unwell, get medical attention.

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

Allergic skin reaction (redness, swelling, blistering, and itching). Serious damage to the eyes (corneal cloudiness, severe pain, tearing, ulcerations, and significantly impaired or loss of vision).

4.3. Indication of any immediate medical attention and special treatment required
Not applicable

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media
In case of fire: Use a fire fighting agent suitable for ordinary combustible material such as water or foam to extinguish.

5.2. Special hazards arising from the substance or mixture
None inherent in this product.

Hazardous Decomposition or By-Products

Substance	Condition
Carbon monoxide	During Combustion
Carbon dioxide	During Combustion

5.3. Special protective actions for fire-fighters
Wear full protective clothing, including helmet, self-contained, positive pressure or pressure demand breathing apparatus, bunker coat and pants, bands around arms, waist and legs, face mask, and protective covering for exposed areas of the head.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
Use personal protective equipment based on the results of an exposure assessment. Refer to Section 8 for PPE recommendations. If anticipated exposure resulting from an accidental release exceeds the protective capabilities of the PPE listed in Section 8, or are unknown, select PPE that offers an appropriate level of protection. Consider the physical and chemical hazards of the material when doing so. Examples of PPE ensembles for emergency response could include wearing bunker gear for a release of flammable material; wearing chemical protective clothing if the spilled material is a corrosive, a sensitizer, a significant dermal irritant, or can be absorbed through the skin; or donning a positive pressure supplied-air respirator for chemicals with inhalation hazards. For information regarding physical and health hazards, refer to sections 2 and 11 of the SDS. Evacuate area. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice.

6.2. Environmental precautions
Avoid release to the environment. For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

6.3. Methods and material for containment and cleaning up
Contain spill. Working from around the edges of the spill inward, cover with bentonite, vermiculite, or commercially available inorganic absorbent material. Mix in sufficient absorbent until it appears dry. Remember, adding an absorbent material does not remove a physical, health, or environmental hazard. Collect as much of the spilled material as possible. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with water. Seal the container. Dispose of collected material as soon as possible in accordance with applicable local/regional/national/international regulations.

SECTION 7: Handling and storage

7.1. Precautions for safe handling
For industrial/occupational use only. Not for consumer sale or use. This product is not intended to be used without prior dilution as specified on the product label. Grounding or safety shoes with electrostatic dissipating soles (ESD) are not required with a chemical dispensing system. Keep out of reach of children. Do not handle until all safety precautions have been read and understood. Avoid breathing dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Avoid release to the environment. Wash contaminated clothing before reuse. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities
Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Occupational exposure limits
If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available

for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Fragrance Component 25	101-84-8	ACGIH	TWA(Vapor fraction):1 ppm;STEL(Vapor fraction):2 ppm	
Fragrance Component 25	101-84-8	Malaysia OELs	TWA(as vapor)(8 hours):7 mg/m3(1 ppm)	
Fragrance Component 40	127-91-3	ACGIH	TWA:20 ppm	A4: Not class. as human carcin, Dermal Sensitizer
PHENYLETHANOL	60-12-8	ACGIH	TWA:0.5 ppm	Danger of cutaneous absorption
Diethyl Phthalate	84-66-2	ACGIH	TWA:5 mg/m3	A4: Not class. as human carcin
Diethyl Phthalate	84-66-2	Malaysia OELs	TWA(8 hours):5 mg/m3	
Fragrance Component 46	Trade Secret	ACGIH	TWA:10 ppm	A4: Not class. as human carcin
Fragrance Component 46	Trade Secret	Malaysia OELs	TWA(8 hours):61 mg/m3(10 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists
CMRG : Chemical Manufacturer's Recommended Guidelines
Malaysia OELs : Malaysia. Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations
TWA: Time-Weighted-Average
STEL: Short Term Exposure Limit
CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls
NOTE: When used with a chemical dispensing system as directed, special ventilation is not required. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

NOTE: When used with a chemical dispensing system as directed, eye contact with the concentrate is not expected to occur. The following protection(s) are recommended if the product is not used with a chemical dispensing system or if there is an accidental release, wear protective eye/face protection. Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:
Full Face Shield
Indirect Vented Goggles

Skin/hand protection
NOTE: When used with a chemical dispensing system as directed, skin contact with the concentrate is not expected to occur. If product is not used with a chemical dispensing system or if there is an accidental release:

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Note: Nitrile gloves may be worn over polymer laminate gloves to improve dexterity.
Gloves made from the following material(s) are recommended: Polymer laminate

If this product is used in a manner that presents a higher potential for exposure (eg. spraying, high splash potential etc.), then use of protective coveralls may be necessary.

If product is not used with a chemical dispensing system or if there is an accidental release:
Select and use body protection to prevent contact based on the results of an exposure assessment. The following protective clothing material(s) are recommended:
Apron - polymer laminate

Respiratory protection

NOTE: When used with a chemical dispensing system as directed, respiratory protection is not required.
If product is not used with a chemical dispensing system or if there is an accidental release:
An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:
Half facepiece or full facepiece air-purifying respirator suitable for organic vapors and particulates

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Liquid
Specific Physical Form:	Liquid
Color	Blue
Odor	Strong Atlantic fresh
Odor threshold	*No Data Available*
pH	6.5 - 8.5
Melting point/Freezing point	*Not Applicable*
Boiling point/Initial boiling point/Boiling range	> 100 ºC
Flash Point	> 100 ºC [*Test Method:*Tagliabue Closed Cup]
Evaporation rate	*No Data Available*
Flammability	Not Applicable
Flammable Limits(LEL)	*No Data Available*
Flammable Limits(UEL)	*No Data Available*
Vapor Pressure	1,333.2 Pa [@ 20 ºC] [*Details:*MITS data]
Relative Vapor Density	*No Data Available*
Relative Density	1 1.03 [@ 23 ºC] [*Ref Std:*WATER=1]
Water solubility	Complete
Solubility- non-water	*No Data Available*
Partition coefficient: n-octanol/ water	*Not Applicable*
Autoignition temperature	*No Data Available*
Decomposition temperature	*No Data Available*
Kinematic Viscosity	98.3 mm2/sec
Volatile Organic Compounds	10 - 30 % [*Test Method:*calculated per CARB title 2]
Percent volatile	20 - 60 %
VOC Less H2O & Exempt Solvents	122 - 366 g/l [*Test Method:*calculated per CARB title 2]
Average particle size	*Not Applicable*
Bulk density	*Not Applicable*

Particle Characteristics	*Not Applicable*

SECTION 10: Stability and reactivity

10.1. Reactivity
This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability
Stable.

10.3. Possibility of hazardous reactions
Hazardous polymerization will not occur.

10.4. Conditions to avoid
Not determined

10.5. Incompatible materials
Strong oxidizing agents

10.6. Hazardous decomposition products

Substance	Condition
None known.	

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:
No health effects are expected.

Skin Contact:
May be harmful in contact with skin.
Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain. Allergic Skin Reaction (non-photo induced): Signs/symptoms may include redness, swelling, blistering, and itching.

Eye Contact:
Corrosive (Eye Burns): Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Ingestion:
Harmful if swallowed. Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Reproductive/Developmental Toxicity:
Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Toxicological Data
If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE >2,000 - =5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE >50 mg/l
Overall product	Ingestion		No data available; calculated ATE >300 - =2,000 mg/kg
C8-10 Alcohols Ethoxylated Propoxylated	Dermal	Rabbit	LD50 >= 1,680 mg/kg
C8-10 Alcohols Ethoxylated Propoxylated	Ingestion	Rat	LD50 >= 810 mg/kg
Fragrance Component 18	Dermal	Rabbit	LD50 > 5,010 mg/kg
Fragrance Component 18	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.34 mg/l
Fragrance Component 18	Ingestion	Rat	LD50 > 5,010 mg/kg
Terpenes and terpenoids, sweet orange-oil	Inhalation-Vapor (4 hours)	Mouse	LC50 > 3.14 mg/l
Terpenes and terpenoids, sweet orange-oil	Dermal	Rabbit	LD50 > 5,000 mg/kg
Terpenes and terpenoids, sweet orange-oil	Ingestion	Rat	LD50 4,400 mg/kg
4-T-BUTYLCYCLOHEXYL ACETATE	Dermal	Rabbit	LD50 > 4,680 mg/kg
4-T-BUTYLCYCLOHEXYL ACETATE	Ingestion	Rat	LD50 3,370 mg/kg
Diethyl Phthalate	Dermal	Rat	LD50 11,200 mg/kg
Diethyl Phthalate	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 6.9 mg/l
Diethyl Phthalate	Ingestion	Rat	LD50 8,200 mg/kg
2-Phenoxyethanol	Dermal	Rabbit	LD50 > 2,000 mg/kg
2-Phenoxyethanol	Inhalation-Dust/Mist	Rat	LC50 > 1.5 mg/l
2-Phenoxyethanol	Ingestion	Rat	LD50 1,394 mg/kg
Linalool	Dermal	Rabbit	LD50 5,610 mg/kg
Linalool	Ingestion	Rat	LD50 2,790 mg/kg
Amyl Cinnamal	Dermal	Rabbit	LD50 > 2,000 mg/kg
Amyl Salicylate	Dermal	Rabbit	LD50 > 2,000 mg/kg
CITRONELLOL	Dermal	Rabbit	LD50 2,650 mg/kg
Fragrance Component 23	Dermal	Rabbit	LD50 > 5,000 mg/kg
Fragrance Component 6	Dermal	Rabbit	LD50 20,000 mg/kg
Hexyl Cinnamal	Dermal	Rabbit	LD50 > 3,000 mg/kg
Hydroxyisohexyl 3-Cyclohexene Carboxaldehyde	Dermal	Rabbit	LD50 > 5,000 mg/kg
Verdyl Acetate	Dermal	Rabbit	LD50 > 5,000 mg/kg
Amyl Cinnamal	Ingestion	Rat	LD50 3,730 mg/kg
Amyl Salicylate	Ingestion	Rat	LD50 2,000 mg/kg
CITRONELLOL	Ingestion	Rat	LD50 3,450 mg/kg
Fragrance Component 2	Dermal	Rat	LD50 > 2,000 mg/kg
Fragrance Component 2	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 5.04 mg/l
Fragrance Component 2	Ingestion	Rat	LD50 > 2,000 mg/kg
Fragrance Component 23	Ingestion	Rat	LD50 > 5,000 mg/kg
Fragrance Component 6	Ingestion	Rat	LD50 > 10,000 mg/kg
Hexyl Cinnamal	Inhalation-Dust/Mist (4 hours)	Rat	LC50 > 2.12 mg/l
Hexyl Cinnamal	Ingestion	Rat	LD50 3,100 mg/kg
Hydroxyisohexyl 3-Cyclohexene Carboxaldehyde	Ingestion	Rat	LD50 > 5,000 mg/kg
TERPINEOL ACETATE	Ingestion	Rat	LD50 5,075 mg/kg

Verdyl Acetate	Ingestion	Rat	LD50 4,300 mg/kg
Terpineol	Dermal	similar compounds	LD50 > 2,000 mg/kg
Terpineol	Ingestion	similar compounds	LD50 > 2,000 mg/kg
TERPINEOL ACETATE	Dermal	similar health hazards	LD50 estimated to be > 5,000 mg/kg
PHENYLETHANOL	Dermal	Rabbit	LD50 2,535 mg/kg
PHENYLETHANOL	Ingestion	Rat	LD50 1,609 mg/kg
Fragrance Component 46	Dermal	Rabbit	LD50 > 5,000 mg/kg
Fragrance Component 46	Ingestion	Rat	LD50 2,490 mg/kg
D-LIMONENE	Inhalation-Vapor (4 hours)	Mouse	LC50 > 3.14 mg/l
D-LIMONENE	Dermal	Rabbit	LD50 > 5,000 mg/kg
D-LIMONENE	Ingestion	Rat	LD50 4,400 mg/kg
Fragrance Component 40	Dermal	similar compounds	LD50 5,000 mg/kg
Fragrance Component 40	Ingestion	similar compounds	LD50 3,700 mg/kg
Fragrance Component 32	Inhalation-Vapor (4 hours)	Mouse	LC50 3 mg/l
Fragrance Component 32	Dermal	Rabbit	LD50 > 5,000 mg/kg
Fragrance Component 45	Dermal	Rabbit	LD50 1,600 mg/kg
COUMARIN	Ingestion	Rat	LD50 > 300 mg/kg
Fragrance Component 32	Ingestion	Rat	LD50 3,200 mg/kg
Fragrance Component 45	Ingestion	Rat	LD50 585 mg/kg
Fragrance Component 53	Dermal	Rat	LD50 > 2,000 mg/kg
Fragrance Component 53	Inhalation-Dust/Mist (4 hours)	Rat	LC50 0.43 mg/l
Fragrance Component 53	Ingestion	Rat	LD50 >300, <2000 mg/kg
Fragrance Component 8	Dermal	Rat	LD50 > 5,000 mg/kg
Fragrance Component 8	Ingestion	Rat	LD50 >2000, <5000 mg/kg
GERANYL ACETATE	Ingestion	Rat	LD50 6,330 mg/kg
GERANYL ACETATE	Dermal	similar compounds	LD50 > 5,460 mg/kg
Fragrance Component 25	Dermal	Rabbit	LD50 > 7,940 mg/kg
Fragrance Component 25	Ingestion	Rat	LD50 2,830 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
C8-10 Alcohols Ethoxylated Propoxylated	Rabbit	Irritant
Fragrance Component 18	Rabbit	No significant irritation
Terpenes and terpenoids, sweet orange-oil	Rabbit	Irritant
Diethyl Phthalate	Rabbit	Minimal irritation
2-Phenoxyethanol	Rabbit	No significant irritation
Linalool	Rabbit	Irritant
Amyl Cinnamal	similar compounds	Irritant
CITRONELLOL	Rabbit	Irritant
Fragrance Component 2	In vitro data	No significant irritation
Fragrance Component 23	similar compounds	Minimal irritation

Fragrance Component 6	Rabbit	Mild irritant
Hexyl Cinnamal	Rabbit	Irritant
Terpineol	Rabbit	Irritant
TERPINEOL ACETATE	Rabbit	Mild irritant
Verdyl Acetate	Rabbit	Mild irritant
PHENYLETHANOL	Rabbit	Minimal irritation
Fragrance Component 46	Rabbit	Minimal irritation
D-LIMONENE	Rabbit	Irritant
Fragrance Component 40	In vitro data	Irritant
Fragrance Component 32	Human	Mild irritant
Fragrance Component 45	Professional judgement	Mild irritant
Fragrance Component 53	Rat	No significant irritation
Fragrance Component 8	Rabbit	Irritant
GERANYL ACETATE	Rabbit	Irritant
Fragrance Component 25	Rabbit	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
C8-10 Alcohols Ethoxylated Propoxylated	Rabbit	Corrosive
Fragrance Component 18	Rabbit	No significant irritation
Terpenes and terpenoids, sweet orange-oil	Rabbit	Mild irritant
Diethyl Phthalate	Rabbit	Mild irritant
2-Phenoxyethanol	Rabbit	Corrosive
Linalool	Rabbit	Moderate irritant
Amyl Cinnamal	similar compounds	Mild irritant
CITRONELLOL	Rabbit	Severe irritant
Fragrance Component 2	In vitro data	No significant irritation
Fragrance Component 23	similar compounds	Mild irritant
Fragrance Component 6	Rabbit	Mild irritant
Hexyl Cinnamal	Rabbit	Mild irritant
Terpineol	similar compounds	Moderate irritant
TERPINEOL ACETATE	In vitro data	No significant irritation
Verdyl Acetate	Rabbit	Severe irritant
PHENYLETHANOL	Rabbit	Corrosive
Fragrance Component 46	Rabbit	Mild irritant
D-LIMONENE	Rabbit	Mild irritant
Fragrance Component 40	Rabbit	Mild irritant
Fragrance Component 32	In vitro data	Mild irritant
Fragrance Component 45	Rabbit	No significant irritation
Fragrance Component 8	Rabbit	Severe irritant
GERANYL ACETATE	similar compounds	No significant irritation
Fragrance Component 25	Rabbit	Severe irritant

Sensitization:

Skin Sensitization

Name	Species	Value

Fragrance Component 18	Guinea pig	Not classified
Terpenes and terpenoids, sweet orange-oil	Mouse	Sensitizing
4-T-BUTYLCYCLOHEXYL ACETATE	Mouse	Sensitizing
Diethyl Phthalate	Human and animal	Not classified
2-Phenoxyethanol	Guinea pig	Not classified
Linalool	Mouse	Sensitizing
Amyl Cinnamal	Mouse	Sensitizing
CITRONELLOL	Mouse	Sensitizing
Fragrance Component 2	Guinea pig	Not classified
Fragrance Component 23	similar compounds	Not classified
Fragrance Component 6	Human	Not classified
Hexyl Cinnamal	Multiple animal species	Sensitizing
Hydroxyisohexyl 3-Cyclohexene Carboxaldehyde	Human and animal	Sensitizing
Terpineol	Mouse	Not classified
TERPINEOL ACETATE	Mouse	Not classified
Verdyl Acetate	Human	Not classified
Fragrance Component 46	Guinea pig	Not classified
D-LIMONENE	Mouse	Sensitizing
Fragrance Component 40	Mouse	Sensitizing
COUMARIN	Human	Some positive data exist, but the data are not sufficient for classification
Fragrance Component 32	Human and animal	Not classified
Fragrance Component 45	Guinea pig	Sensitizing
Fragrance Component 8	Mouse	Sensitizing
GERANYL ACETATE	Mouse	Sensitizing
Fragrance Component 25	Mouse	Sensitizing

Photosensitization

Name	Species	Value
Fragrance Component 2	Guinea pig	Not sensitizing

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
Fragrance Component 18	In Vitro	Not mutagenic
Fragrance Component 18	In vivo	Not mutagenic
Terpenes and terpenoids, sweet orange-oil	In Vitro	Not mutagenic
Terpenes and terpenoids, sweet orange-oil	In vivo	Not mutagenic
Diethyl Phthalate	In Vitro	Some positive data exist, but the data are not sufficient for classification
2-Phenoxyethanol	In Vitro	Not mutagenic
2-Phenoxyethanol	In vivo	Not mutagenic
Linalool	In Vitro	Not mutagenic
Linalool	In vivo	Not mutagenic

Amyl Cinnamal	In Vitro	Not mutagenic
Fragrance Component 2	In Vitro	Not mutagenic
Fragrance Component 2	In vivo	Not mutagenic
Fragrance Component 23	In Vitro	Not mutagenic
Fragrance Component 6	In Vitro	Not mutagenic
Fragrance Component 6	In vivo	Not mutagenic
Hexyl Cinnamal	In Vitro	Not mutagenic
Hexyl Cinnamal	In vivo	Not mutagenic
Terpineol	In Vitro	Not mutagenic
TERPINEOL ACETATE	In Vitro	Not mutagenic
Verdyl Acetate	In Vitro	Not mutagenic
Fragrance Component 46	In vivo	Not mutagenic
Fragrance Component 46	In Vitro	Some positive data exist, but the data are not sufficient for classification
D-LIMONENE	In Vitro	Not mutagenic
D-LIMONENE	In vivo	Not mutagenic
Fragrance Component 40	In Vitro	Some positive data exist, but the data are not sufficient for classification
Fragrance Component 32	In Vitro	Not mutagenic
Fragrance Component 45	In Vitro	Not mutagenic
Fragrance Component 45	In vivo	Not mutagenic
Fragrance Component 53	In Vitro	Not mutagenic
Fragrance Component 8	In Vitro	Not mutagenic
GERANYL ACETATE	In Vitro	Not mutagenic
GERANYL ACETATE	In vivo	Not mutagenic
Fragrance Component 25	In Vitro	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Fragrance Component 18	Ingestion	Multiple animal species	Not carcinogenic
Terpenes and terpenoids, sweet orange-oil	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification
Diethyl Phthalate	Dermal	Mouse	Some positive data exist, but the data are not sufficient for classification
2-Phenoxyethanol	Ingestion	Multiple animal species	Not carcinogenic
Fragrance Component 46	Ingestion	Multiple animal species	Some positive data exist, but the data are not sufficient for classification
D-LIMONENE	Ingestion	Rat	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Fragrance Component 18	Ingestion	Not classified for development	Rat	NOAEL 5,000 mg/kg/day	during organogenesis
Terpenes and terpenoids, sweet orange-oil	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	premating & during gestation
Terpenes and terpenoids, sweet orange-oil	Ingestion	Not classified for development	Multiple animal species	NOAEL 591 mg/kg/day	during organogenesis
Diethyl Phthalate	Ingestion	Not classified for female reproduction	Mouse	NOAEL 1,625 mg/kg/day	2 generation
Diethyl Phthalate	Ingestion	Not classified for male reproduction	Rat	NOAEL 1,625 mg/kg	2 generation
Diethyl Phthalate	Ingestion	Not classified for development	Rat	NOAEL	during

				1,900 mg/kg/day	organogenesis
2-Phenoxyethanol	Ingestion	Not classified for female reproduction	Mouse	NOAEL 3,700 mg/kg/day	2 generation
2-Phenoxyethanol	Ingestion	Not classified for male reproduction	Mouse	NOAEL 3,700 mg/kg/day	2 generation
2-Phenoxyethanol	Dermal	Not classified for development	Rabbit	NOAEL 600 mg/kg/day	during organogenesis
2-Phenoxyethanol	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during gestation
Linalool	Ingestion	Not classified for female reproduction	Rat	NOAEL 365 mg/kg/day	premating into lactation
Linalool	Ingestion	Not classified for development	Rat	NOAEL 365 mg/kg/day	premating into lactation
Fragrance Component 2	Ingestion	Not classified for female reproduction	Rat	NOAEL 92 mg/kg/day	2 generation
Fragrance Component 2	Ingestion	Not classified for male reproduction	Rat	NOAEL 94 mg/kg/day	2 generation
Fragrance Component 2	Ingestion	Not classified for development	Rat	NOAEL 150 mg/kg/day	during gestation
Fragrance Component 6	Ingestion	Not classified for development	Rat	NOAEL 1,000 mg/kg/day	during organogenesis
Hexyl Cinnamal	Ingestion	Not classified for female reproduction	Rat	NOAEL 100 mg/kg/day	premating into lactation
Hexyl Cinnamal	Ingestion	Not classified for male reproduction	Rat	NOAEL 100 mg/kg/day	47 days
Hexyl Cinnamal	Ingestion	Not classified for development	Rat	NOAEL 100 mg/kg/day	premating into lactation
Terpineol	Ingestion	Toxic to male reproduction	similar compoun ds	NOAEL 250 mg/kg/day	5 weeks
TERPINEOL ACETATE	Ingestion	Not classified for development	Rat	NOAEL 85 mg/kg/day	premating into lactation
TERPINEOL ACETATE	Ingestion	Toxic to female reproduction	Rat	NOAEL 250 mg/kg/day	premating into lactation
TERPINEOL ACETATE	Ingestion	Toxic to male reproduction	Rat	LOAEL 85 mg/kg/day	90 days
PHENYLETHANOL	Dermal	Not classified for development	Rat	NOAEL 70 mg/kg/day	during organogenesis
PHENYLETHANOL	Ingestion	Not classified for development	Rat	NOAEL Not available	during organogenesis
Fragrance Component 46	Ingestion	Not classified for development	Rat	NOAEL 100 mg/kg/day	during organogenesis
D-LIMONENE	Ingestion	Not classified for female reproduction	Rat	NOAEL 750 mg/kg/day	premating & during gestation
D-LIMONENE	Ingestion	Not classified for development	Multiple animal species	NOAEL 591 mg/kg/day	during organogenesis
Fragrance Component 32	Ingestion	Toxic to female reproduction	Rat	NOAEL 50 mg/kg/day	premating into lactation
Fragrance Component 32	Ingestion	Toxic to male reproduction	Rat	NOAEL 50 mg/kg/day	35 days
Fragrance Component 32	Ingestion	Toxic to development	Rat	NOAEL 50 mg/kg/day	premating into lactation
Fragrance Component 45	Ingestion	Not classified for female reproduction	Rat	NOAEL 125 mg/kg/day	1 generation
Fragrance Component 45	Ingestion	Not classified for male reproduction	Rat	NOAEL 125 mg/kg/day	1 generation
Fragrance Component 45	Ingestion	Not classified for development	Rat	NOAEL 75 mg/kg/day	1 generation
Fragrance Component 8	Ingestion	Toxic to female reproduction	Rat	NOAEL 25 mg/kg/day	1 generation

Fragrance Component 8	Ingestion	Toxic to male reproduction	Rat	NOAEL 25 mg/kg/day	1 generation
Fragrance Component 8	Ingestion	Toxic to development	Rat	NOAEL 25 mg/kg/day	1 generation
Fragrance Component 25	Ingestion	Toxic to development	Rat	NOAEL 25 mg/kg/day	2 generation
Fragrance Component 25	Ingestion	Toxic to female reproduction	Rat	NOAEL 25 mg/kg/day	2 generation
Fragrance Component 25	Ingestion	Toxic to male reproduction	Rat	NOAEL 25 mg/kg/day	2 generation

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
C8-10 Alcohols Ethoxylated Propoxylated	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Terpenes and terpenoids, sweet orange-oil	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Terpenes and terpenoids, sweet orange-oil	Ingestion	nervous system	Not classified		NOAEL Not available	
2-Phenoxyethanol	Inhalation	respiratory irritation	May cause respiratory irritation	official classification	NOAEL Not available	
Linalool	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
Amyl Cinnamal	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
CITRONELLOL	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL not available	
Fragrance Component 2	Dermal	photoirritation	Not classified	Multiple animal species	NOAEL Not Available	
Fragrance Component 6	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Hexyl Cinnamal	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Terpineol	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not Available	
TERPINEOL ACETATE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Verdyl Acetate	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
D-LIMONENE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
D-LIMONENE	Ingestion	nervous system	Not classified		NOAEL Not available	
Fragrance Component 40	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
Fragrance Component 32	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not Available	
Fragrance Component 45	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for	similar health	NOAEL Not available	

			classification	hazards		
Fragrance Component 8	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	
GERANYL ACETATE	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	similar health hazards	NOAEL Not available	

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Fragrance Component 18	Ingestion	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 470 mg/kg/day	105 weeks
Fragrance Component 18	Ingestion	heart | endocrine system | liver	Not classified	Rat	NOAEL 3,040 mg/kg/day	105 weeks
Fragrance Component 18	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 115 mg/kg/day	105 weeks
Fragrance Component 18	Ingestion	skin | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | immune system | nervous system | vascular system	Not classified	Rat	NOAEL 3,040 mg/kg/day	105 weeks
Terpenes and terpenoids, sweet orange-oil	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 75 mg/kg/day	103 weeks
Terpenes and terpenoids, sweet orange-oil	Ingestion	liver	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
Terpenes and terpenoids, sweet orange-oil	Ingestion	heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles | nervous system | respiratory system	Not classified	Rat	NOAEL 600 mg/kg/day	103 weeks
Diethyl Phthalate	Dermal	skin	Not classified	Rat	NOAEL 855 mg/kg/day	2 years
Diethyl Phthalate	Dermal	liver | kidney and/or bladder	Not classified	Rat	NOAEL 855 mg/kg	2 years
Diethyl Phthalate	Dermal	heart	Not classified	Rat	NOAEL 855 mg/kg/day	2 years
Diethyl Phthalate	Dermal	gastrointestinal tract | nervous system | respiratory system	Not classified	Rat	NOAEL 855 mg/kg	2 years
Diethyl Phthalate	Ingestion	heart	Not classified	Rat	NOAEL 3,710 mg/kg/day	16 weeks
Diethyl Phthalate	Ingestion	nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 3,710 mg/kg	16 weeks
Diethyl Phthalate	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 3,160 mg/kg	6 weeks
Diethyl Phthalate	Ingestion	liver	Not classified	Rat	NOAEL 1,753 mg/kg	3 weeks
Diethyl Phthalate	Ingestion	endocrine system	Not classified	Rat	NOAEL 3,710 mg/kg/day	16 weeks
Diethyl Phthalate	Ingestion	muscles | respiratory system	Not classified	Rat	NOAEL 3,710 mg/kg	16 weeks
2-Phenoxyethanol	Dermal	skin | hematopoietic system | liver | eyes	Not classified	Rabbit	NOAEL 500 mg/kg/day	13 weeks

2-Phenoxyethanol	Ingestion	heart | endocrine system | hematopoietic system | liver | immune system | nervous system | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 1,514 mg/kg/day	13 weeks
Linalool	Dermal	skin | heart | endocrine system | hematopoietic system | liver | immune system | muscles | nervous system | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 1,000 mg/kg/day	91 days
Linalool	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 53 mg/kg/day	95 days
Linalool	Ingestion	endocrine system | hematopoietic system | liver | nervous system | eyes	Not classified	Rat	NOAEL 498 mg/kg/day	95 days
Linalool	Ingestion	immune system	Not classified	Mouse	NOAEL 375 mg/kg/day	5 days
Amyl Cinnamal	Ingestion	liver | kidney and/or bladder | heart | endocrine system | gastrointestinal tract | hematopoietic system | immune system | muscles | nervous system | respiratory system | vascular system	Not classified	Rat	NOAEL 287 mg/kg/day	14 weeks
Fragrance Component 2	Ingestion	heart | skin | endocrine system | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system | vascular system	Not classified	Rat	NOAEL 150 mg/kg/day	90 days
Fragrance Component 6	Ingestion	kidney and/or bladder	Not classified	Rat	NOAEL 90 mg/kg/day	13 weeks
Fragrance Component 6	Ingestion	gastrointestinal tract | liver | heart | endocrine system | hematopoietic system | immune system | muscles | nervous system | respiratory system	Not classified	Rat	NOAEL 270 mg/kg/day	13 weeks
Hexyl Cinnamal	Dermal	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 500 mg/kg/day	90 days
Hexyl Cinnamal	Dermal	skin | gastrointestinal tract | liver | immune system | kidney and/or bladder	Not classified	Rat	NOAEL 500 mg/kg/day	90 days

TERPINEOL ACETATE	Ingestion	liver | immune system | kidney and/or bladder	Not classified	Rat	NOAEL 750 mg/kg/day	90 days
TERPINEOL ACETATE	Ingestion	heart | bone, teeth, nails, and/or hair | hematopoietic system | muscles	Not classified	Rat	NOAEL 400 mg/kg/day	20 weeks
Fragrance Component 46	Ingestion	nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 250 mg/kg/day	13 weeks
Fragrance Component 46	Ingestion	heart | skin | endocrine system | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | muscles | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 1,750 mg/kg/day	13 weeks
D-LIMONENE	Ingestion	kidney and/or bladder	Not classified	Rat	LOAEL 75 mg/kg/day	103 weeks
D-LIMONENE	Ingestion	liver	Not classified	Mouse	NOAEL 1,000 mg/kg/day	103 weeks
D-LIMONENE	Ingestion	heart | endocrine system | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles | nervous system | respiratory system	Not classified	Rat	NOAEL 600 mg/kg/day	103 weeks
Fragrance Component 32	Inhalation	nervous system	Not classified	Rat	NOAEL 1.23 mg/l	28 days
Fragrance Component 32	Ingestion	liver | muscles | nervous system | kidney and/or bladder | endocrine system | hematopoietic system | respiratory system	Not classified	Rat	NOAEL 200 mg/kg/day	35 days
Fragrance Component 45	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 214 mg/kg/day	52 weeks
Fragrance Component 53	Ingestion	hematopoietic system	Not classified	Rat	NOAEL 100 mg/kg/day	28 days
Fragrance Component 8	Ingestion	heart | endocrine system | liver | kidney and/or bladder | skin | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | immune system | muscles | nervous system | eyes | respiratory system | vascular system	Not classified	Rat	NOAEL 120 mg/kg/day	90 days
Fragrance Component 25	Dermal	skin | liver | hematopoietic system | nervous system | kidney and/or bladder	Not classified	Rat	NOAEL 1,000 mg/kg/day	13 weeks
Fragrance Component 25	Inhalation	respiratory system | heart | endocrine	Not classified	Rat	NOAEL 0.14 mg/l	31 days

		system | gastrointestinal tract | hematopoietic system | liver | immune system | muscles | nervous system | kidney and/or bladder | vascular system				
Fragrance Component 25	Ingestion	heart | skin | endocrine system | gastrointestinal tract | bone, teeth, nails, and/or hair | hematopoietic system | liver | immune system | muscles | nervous system | eyes | kidney and/or bladder | respiratory system	Not classified	Rat	NOAEL 301 mg/kg/day	13 weeks

Aspiration Hazard

Name	Value
Terpenes and terpenoids, sweet orange-oil	Aspiration hazard
D-LIMONENE	Aspiration hazard
Fragrance Component 40	Aspiration hazard
Fragrance Component 32	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient classifications are mandated by a competent authority. Additional information leading to material classification in Section 2 is available upon request. In addition, environmental fate and effects data on ingredients may not be reflected in this section because an ingredient is present below the threshold for labeling, an ingredient is not expected to be available for exposure, or the data is considered not relevant to the material as a whole.

12.1. Toxicity

Acute aquatic hazard:
GHS Acute 2: Toxic to aquatic life.

Chronic aquatic hazard:
GHS Chronic 2: Toxic to aquatic life with long lasting effects

No product test data available

Material	Cas #	Organism	Type	Exposure	Test Endpoint	Test Result
C8-10 Alcohols Ethoxylated Propoxylated	68603-25-8	Rainbow Trout	Experimental	96 hours	LC50	8.7 mg/l
C8-10 Alcohols Ethoxylated Propoxylated	68603-25-8	Water flea	Experimental	48 hours	EC50	12.3 mg/l
C8-10 Alcohols Ethoxylated Propoxylated	68603-25-8	Bacteria	Experimental	16 hours	IC50	220 mg/l
Fragrance	Trade Secret	Goldfish	Experimental	96 hours	LC50	>5,000 mg/l

Component 18						
Fragrance Component 18	Trade Secret	Green algae	Experimental	72 hours	EC50	>100 mg/l
Fragrance Component 18	Trade Secret	Water flea	Experimental	48 hours	EC50	>100 mg/l
Fragrance Component 18	Trade Secret	Green algae	Experimental	72 hours	NOEC	100 mg/l
Fragrance Component 18	Trade Secret	Bacteria	Experimental	18 hours	EC10	1,000 mg/l
Fragrance Component 18	Trade Secret	Bobwhite quail	Experimental	14 days	LD50	>2,000 mg per kg of bodyweight
Terpenes and terpenoids, sweet orange-oil	68647-72-3	Fathead Minnow	Analogous Compound	96 hours	LC50	0.702 mg/l
Terpenes and terpenoids, sweet orange-oil	68647-72-3	Green algae	Analogous Compound	72 hours	ErC50	0.32 mg/l
Terpenes and terpenoids, sweet orange-oil	68647-72-3	Water flea	Analogous Compound	48 hours	EC50	0.307 mg/l
Terpenes and terpenoids, sweet orange-oil	68647-72-3	Green algae	Analogous Compound	72 hours	ErC10	0.174 mg/l
Terpenes and terpenoids, sweet orange-oil	68647-72-3	Water flea	Analogous Compound	21 days	NOEC	0.08 mg/l
Diethyl Phthalate	84-66-2	Green algae	Experimental	72 hours	ErC50	45 mg/l
Diethyl Phthalate	84-66-2	Rainbow Trout	Experimental	96 hours	LC50	12 mg/l
Diethyl Phthalate	84-66-2	Scud	Experimental	10 days	LC50	4.21 mg/l
Diethyl Phthalate	84-66-2	Water flea	Experimental	48 hours	LC50	90 mg/l
Diethyl Phthalate	84-66-2	Common Carp	Experimental	28 days	NOEC	5 mg/l
Diethyl Phthalate	84-66-2	Green algae	Experimental	72 hours	ErC10	9 mg/l
Diethyl Phthalate	84-66-2	Water flea	Experimental	21 days	NOEC	3.8 mg/l
Diethyl Phthalate	84-66-2	Activated sludge	Experimental	30 minutes	EC20	400 mg/l
Diethyl Phthalate	84-66-2	Lettuce	Experimental	14 days	EC50	134 mg/kg (Dry Weight)
Diethyl Phthalate	84-66-2	Redworm	Experimental	30 days	LC50	5 mg/kg (Dry Weight)
Diethyl Phthalate	84-66-2	Soil microbes	Experimental	70 days	NOEC	100 mg/kg (Dry Weight)
2-Phenoxyethanol	122-99-6	Activated sludge	Experimental	30 minutes	EC50	>1,000 mg/l
2-Phenoxyethanol	122-99-6	Fathead Minnow	Experimental	96 hours	LC50	344 mg/l
2-Phenoxyethanol	122-99-6	Green algae	Experimental	72 hours	EC50	>100 mg/l
2-Phenoxyethanol	122-99-6	Scud	Experimental	96 hours	LC50	357 mg/l
2-Phenoxyethanol	122-99-6	Water flea	Experimental	48 hours	EC50	>500 mg/l
2-Phenoxyethanol	122-99-6	Fathead Minnow	Experimental	34 days	NOEC	24 mg/l
2-Phenoxyethanol	122-99-6	Green algae	Experimental	72 hours	NOEC	46 mg/l
2-Phenoxyethanol	122-99-6	Water flea	Experimental	21 days	NOEC	9.43 mg/l
4-T-BUTYLCYCLOHEXYL ACETATE	32210-23-4	Common Carp	Experimental	96 hours	LC50	8.6 mg/l
4-T-BUTYLCYCLOHEXYL ACETATE	32210-23-4	Green algae	Experimental	72 hours	ErC50	22 mg/l
4-T-BUTYLCYCLOHEXYL ACETATE	32210-23-4	Water flea	Experimental	48 hours	EC50	5.3 mg/l
4-T-BUTYLCYCLOHEXYL ACETATE	32210-23-4	Green algae	Experimental	72 hours	ErC10	11 mg/l
4-T-BUTYLCYCLOHEXYL ACETATE	32210-23-4	Activated sludge	Experimental	3 hours	EC50	302 mg/l
Amyl Cinnamal	122-40-7	Green algae	Experimental	72 hours	ErC50	>1.5 mg/l
Amyl Cinnamal	122-40-7	Medaka	Experimental	96 hours	LC50	0.91 mg/l
Amyl Cinnamal	122-40-7	Water flea	Experimental	48 hours	EC50	0.28 mg/l
Amyl Cinnamal	122-40-7	Green algae	Experimental	72 hours	NOEC	0.21 mg/l
Amyl Cinnamal	122-40-7	Water flea	Experimental	21 days	NOEC	0.014 mg/l
Amyl Salicylate	2050-08-0	Green algae	Experimental	72 hours	ErC50	0.77 mg/l

Amyl Salicylate	2050-08-0	Water flea	Experimental	48 hours	EC50	0.88 mg/l
Amyl Salicylate	2050-08-0	Zebra Fish	Experimental	96 hours	LC50	1.34 mg/l
Amyl Salicylate	2050-08-0	Green algae	Experimental	72 hours	NOEC	0.2 mg/l
CITRONELLOL	106-22-9	Bacteria	Experimental	30 minutes	EC10	580 mg/l
CITRONELLOL	106-22-9	Golden Orfe	Experimental	96 hours	LC50	14.66 mg/l
CITRONELLOL	106-22-9	Green algae	Experimental	72 hours	EC50	2.4 mg/l
CITRONELLOL	106-22-9	Water flea	Experimental	48 hours	EC50	17.48 mg/l
Fragrance Component 2	1222-05-5	Copepod	Experimental	48 hours	LC50	0.47 mg/l
Fragrance Component 2	1222-05-5	Fish	Experimental	96 hours	LC50	0.4912 mg/l
Fragrance Component 2	1222-05-5	Green algae	Experimental	72 hours	ErC50	>0.854 mg/l
Fragrance Component 2	1222-05-5	Water flea	Experimental	48 hours	EC50	0.194 mg/l
Fragrance Component 2	1222-05-5	Copepod	Experimental	5.5 days	NOEC	0.037 mg/l
Fragrance Component 2	1222-05-5	Fathead Minnow	Experimental	36 days	NOEC	0.068 mg/l
Fragrance Component 2	1222-05-5	Green algae	Experimental	72 hours	NOEC	0.201 mg/l
Fragrance Component 2	1222-05-5	Scud	Experimental	28 days	NOEC	7.1 mg/kg (Dry Weight)
Fragrance Component 2	1222-05-5	Water flea	Experimental	21 days	NOEC	0.111 mg/l
Fragrance Component 2	1222-05-5	Onion	Experimental	14 days	EC50	12.4 mg/kg (Dry Weight)
Fragrance Component 2	1222-05-5	Redworm	Experimental	56 days	NOEC	45 mg/kg (Dry Weight)
Fragrance Component 2	1222-05-5	Soil microbes	Experimental	28 days	NOEC	1,000 mg/kg (Dry Weight)
Fragrance Component 2	1222-05-5	Springtail	Experimental	28 days	NOEC	45 mg/kg (Dry Weight)
Fragrance Component 23	17511-60-3	Activated sludge	Estimated	3 hours	NOEC	1,000 mg/l
Fragrance Component 23	17511-60-3	Fathead Minnow	Experimental	96 hours	LC50	6.7 mg/l
Fragrance Component 23	17511-60-3	Green algae	Experimental	72 hours	EC50	2.5 mg/l
Fragrance Component 23	17511-60-3	Water flea	Experimental	48 hours	EC50	4.6 mg/l
Fragrance Component 23	17511-60-3	Fathead Minnow	Experimental	21 days	NOEC	0.8 mg/l
Fragrance Component 23	17511-60-3	Green algae	Experimental	72 hours	NOEC	1.8 mg/l
Fragrance Component 23	17511-60-3	Water flea	Experimental	21 days	NOEC	0.83 mg/l
Fragrance Component 46	Trade Secret	Activated sludge	Experimental	3 hours	EC50	855 mg/l
Fragrance Component 46	Trade Secret	Green algae	Experimental	72 hours	EC50	110 mg/l
Fragrance Component 46	Trade Secret	Medaka	Experimental	96 hours	LC50	4 mg/l
Fragrance Component 46	Trade Secret	Water flea	Experimental	48 hours	EC50	17 mg/l
Fragrance Component 46	Trade Secret	Green algae	Experimental	72 hours	NOEC	52 mg/l
Fragrance Component 46	Trade Secret	Medaka	Experimental	28 days	NOEC	0.92 mg/l
Fragrance Component 6	Trade Secret	Water flea	Experimental	48 hours	EC50	19.3 mg/l
Fragrance Component 6	Trade Secret	Zebra Fish	Experimental	96 hours	LC50	>10 mg/l
Fragrance Component 6	Trade Secret	Green algae	Experimental	72 hours	EC10	>16.6 mg/l
Hexyl Cinnamal	101-86-0	Green algae	Estimated	72 hours	EC50	>1.5 mg/l
Hexyl Cinnamal	101-86-0	Medaka	Estimated	96 hours	LC50	0.91 mg/l

Hexyl Cinnamal	101-86-0	Water flea	Estimated	48 hours	EC50	0.28 mg/l
Hexyl Cinnamal	101-86-0	Green algae	Estimated	72 hours	NOEC	0.21 mg/l
Hexyl Cinnamal	101-86-0	Water flea	Estimated	21 days	NOEC	0.014 mg/l
Hydroxyisohexyl 3-Cyclohexene Carboxaldehyde	31906-04-4	Fathead Minnow	Estimated	96 hours	LC50	11.8 mg/l
Hydroxyisohexyl 3-Cyclohexene Carboxaldehyde	31906-04-4	Green algae	Estimated	72 hours	EC50	25.4 mg/l
Hydroxyisohexyl 3-Cyclohexene Carboxaldehyde	31906-04-4	Water flea	Estimated	48 hours	EC50	76 mg/l
Hydroxyisohexyl 3-Cyclohexene Carboxaldehyde	31906-04-4	Green algae	Estimated	72 hours	NOEC	5.95 mg/l
Linalool	78-70-6	Green algae	Experimental	72 hours	ErC50	>34 mg/l
Linalool	78-70-6	Rainbow Trout	Experimental	96 hours	LC50	27.8 mg/l
Linalool	78-70-6	Water flea	Experimental	48 hours	EC50	20 mg/l
Linalool	78-70-6	Green algae	Experimental	72 hours	NOEC	5.6 mg/l
Linalool	78-70-6	Water flea	Experimental	21 days	NOEC	9.5 mg/l
Linalool	78-70-6	Activated sludge	Experimental	3 hours	EC50	>100 mg/l
Linalool	78-70-6	Arthropod	Experimental	3 days	LC50	25,000
Linalool	78-70-6	Bobwhite quail	Experimental	N/A	LC50	>5,620
Linalool	78-70-6	Lettuce	Experimental	3 days	EC50	>=100 mg/l
PHENYLETHANOL	60-12-8	Activated sludge	Experimental	30 minutes	EC50	>100 mg/l
PHENYLETHANOL	60-12-8	Bacteria	Experimental	17 hours	EC50	1,320 mg/l
PHENYLETHANOL	60-12-8	Golden Orfe	Experimental	96 hours	LC50	>=215 mg/l
PHENYLETHANOL	60-12-8	Green algae	Experimental	72 hours	EbC50	490 mg/l
PHENYLETHANOL	60-12-8	Water flea	Experimental	48 hours	EC50	287 mg/l
PHENYLETHANOL	60-12-8	Green algae	Experimental	72 hours	NOEC	280 mg/l
Terpineol	98-55-5	Green algae	Analogous Compound	72 hours	ErC50	68 mg/l
Terpineol	98-55-5	Water flea	Analogous Compound	48 hours	EC50	73 mg/l
Terpineol	98-55-5	Zebra Fish	Analogous Compound	96 hours	LC50	70 mg/l
Terpineol	98-55-5	Green algae	Analogous Compound	72 hours	NOEC	3.9 mg/l
TERPINEOL ACETATE	8007-35-0	Rainbow Trout	Estimated	96 hours	LC50	6.3 mg/l
Verdyl Acetate	5413-60-5	Fathead Minnow	Analogous Compound	96 hours	LC50	6.7 mg/l
Verdyl Acetate	5413-60-5	Green algae	Analogous Compound	72 hours	ErC50	2.5 mg/l
Verdyl Acetate	5413-60-5	Water flea	Analogous Compound	48 hours	EC50	4.6 mg/l
Verdyl Acetate	5413-60-5	Fathead Minnow	Analogous Compound	21 days	NOEC	0.8 mg/l
Verdyl Acetate	5413-60-5	Green algae	Analogous Compound	72 hours	NOEC	1.8 mg/l
Verdyl Acetate	5413-60-5	Water flea	Analogous Compound	21 days	NOEC	0.83 mg/l
Verdyl Acetate	5413-60-5	Activated sludge	Analogous Compound	3 hours	NOEC	1,000 mg/l
COUMARIN	91-64-5	Activated sludge	Experimental	3 hours	IC50	640 mg/l
COUMARIN	91-64-5	Guppy	Experimental	96 hours	LC50	56 mg/l
COUMARIN	91-64-5	Water flea	Experimental	48 hours	LC50	13.5 mg/l
Fragrance Component 40	127-91-3	Fathead Minnow	Experimental	96 hours	LC50	0.5 mg/l
Fragrance Component 40	127-91-3	Water flea	Experimental	48 hours	LC50	1.25 mg/l

Fragrance Component 45	2705-87-5	Fathead Minnow	Experimental	96 hours	LC50	0.13 mg/l
Fragrance Component 45	2705-87-5	Green algae	Experimental	72 hours	EC50	3 mg/l
Fragrance Component 45	2705-87-5	Water flea	Experimental	48 hours	EC50	3.8 mg/l
Fragrance Component 45	2705-87-5	Green algae	Experimental	72 hours	NOEC	0.74 mg/l
Benzenepropanal, 4-ethyl-.alpha.,.alpha.-dimethyl-	67634-15-5	Green algae	Analogous Compound	72 hours	ErC50	>1.2 mg/l
Benzenepropanal, 4-ethyl-.alpha.,.alpha.-dimethyl-	67634-15-5	Rainbow Trout	Analogous Compound	96 hours	LC50	>0.7 mg/l
Benzenepropanal, 4-ethyl-.alpha.,.alpha.-dimethyl-	67634-15-5	Water flea	Analogous Compound	48 hours	EC50	0.87 mg/l
Benzenepropanal, 4-ethyl-.alpha.,.alpha.-dimethyl-	67634-15-5	Green algae	Analogous Compound	72 hours	NOEC	1.2 mg/l
Benzenepropanal, 4-ethyl-.alpha.,.alpha.-dimethyl-	67634-15-5	Activated sludge	Analogous Compound	3 hours	EC50	>100 mg/l
D-LIMONENE	5989-27-5	Fathead Minnow	Experimental	96 hours	LC50	0.702 mg/l
D-LIMONENE	5989-27-5	Green algae	Experimental	72 hours	ErC50	0.32 mg/l
D-LIMONENE	5989-27-5	Water flea	Experimental	48 hours	EC50	0.307 mg/l
D-LIMONENE	5989-27-5	Fathead Minnow	Experimental	8 days	EC10	0.32 mg/l
D-LIMONENE	5989-27-5	Green algae	Experimental	72 hours	ErC10	0.174 mg/l
D-LIMONENE	5989-27-5	Water flea	Experimental	21 days	NOEC	0.153 mg/l
Fragrance Component 25	101-84-8	Green algae	Experimental	72 hours	ErC50	0.455 mg/l
Fragrance Component 25	101-84-8	Medaka	Experimental	96 hours	LC50	1.8 mg/l
Fragrance Component 25	101-84-8	Water flea	Experimental	48 hours	EC50	1.96 mg/l
Fragrance Component 25	101-84-8	Green algae	Experimental	72 hours	NOEC	0.24 mg/l
Fragrance Component 25	101-84-8	Activated sludge	Experimental	3 hours	EC50	>100 mg/l
Fragrance Component 30	110-41-8	Green algae	Experimental	72 hours	EC50	0.18 mg/l
Fragrance Component 30	110-41-8	Rainbow Trout	Experimental	96 hours	LC50	0.35 mg/l
Fragrance Component 30	110-41-8	Water flea	Experimental	48 hours	EC50	0.21 mg/l
Fragrance Component 30	110-41-8	Green algae	Experimental	72 hours	NOEC	0.089 mg/l
Fragrance Component 30	110-41-8	Water flea	Experimental	21 days	NOEC	0.033 mg/l
Fragrance Component 32	Trade Secret	Green algae	Experimental	72 hours	ErC50	5.8 mg/l
Fragrance Component 32	Trade Secret	Medaka	Experimental	96 hours	LC50	2 mg/l
Fragrance Component 32	Trade Secret	Sheepshead Minnow	Experimental	96 hours	LC50	48 mg/l
Fragrance Component 32	Trade Secret	Water flea	Experimental	48 hours	EC50	1.9 mg/l
Fragrance Component 32	Trade Secret	Green algae	Experimental	72 hours	NOEC	0.48 mg/l
Fragrance Component 32	Trade Secret	Medaka	Experimental	N/A	NOEC	0.69 mg/l
Fragrance	Trade Secret	Water flea	Experimental	21 days	NOEC	0.46 mg/l

Component 32						
Fragrance Component 53	Trade Secret	Activated sludge	Experimental	3 hours	EC50	8.47 mg/l
Fragrance Component 8	Trade Secret	Green algae	Experimental	96 hours	EC50	3.8 mg/l
Fragrance Component 8	Trade Secret	Water flea	Experimental	48 hours	EC50	1.4 mg/l
Fragrance Component 8	Trade Secret	Green algae	Experimental	96 hours	NOEC	0.7 mg/l
Fragrance Component 8	Trade Secret	Water flea	Experimental	21 days	NOEC	0.71 mg/l
Fragrance Component 8	Trade Secret	Activated sludge	Experimental	3 hours	EC50	100 mg/l
GERANYL ACETATE	105-87-3	Golden Orfe	Analogous Compound	96 hours	LC50	68.12 mg/l
GERANYL ACETATE	105-87-3	Green algae	Experimental	72 hours	EC50	3.72 mg/l
GERANYL ACETATE	105-87-3	Water flea	Experimental	48 hours	EC50	14.1 mg/l
GERANYL ACETATE	105-87-3	Green algae	Experimental	72 hours	NOEC	0.585 mg/l
GERANYL ACETATE	105-87-3	Activated sludge	Experimental	30 minutes	NOEC	>=800 mg/l

12.2. Persistence and degradability

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
C8-10 Alcohols Ethoxylated Propoxylated	68603-25-8	Experimental Biodegradation	28 days	Biological Oxygen Demand	>60 %BOD/ThOD	OECD 301F - Manometric Respiro
C8-10 Alcohols Ethoxylated Propoxylated	68603-25-8	Experimental Aquatic Inherent Biodegrad.	28 days	Carbon dioxide evolution	>70 %CO2 evolution/THCO2 evolution	OECD 302B Zahn-Wellens/EVPA
Fragrance Component 18	Trade Secret	Experimental Biodegradation	28 days	Biological Oxygen Demand	84.4 %BOD/ThOD	OECD 301F - Manometric Respiro
Fragrance Component 18	Trade Secret	Experimental Aquatic Inherent Biodegrad.	42 days	Dissolv. Organic Carbon Deplet	83.6 %removal of DOC	OECD 302A - Modified SCAS Test
Fragrance Component 18	Trade Secret	Experimental Biodegradation	64 days	Dissolv. Organic Carbon Deplet	23.6 %removal of DOC	OECD 306(Misc)-Biodegrad. Seaw
Terpenes and terpenoids, sweet orange-oil	68647-72-3	Analogous Compound Biodegradation	28 days	Carbon dioxide evolution	72 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
Diethyl Phthalate	84-66-2	Experimental Biodegradation	28 days	Biological Oxygen Demand	88 %BOD/ThOD	OECD 301C - MITI (I)
2-Phenoxyethanol	122-99-6	Experimental Biodegradation	28 days	Biological Oxygen Demand	90 %BOD/ThOD	OECD 301F - Manometric Respiro
4-T-BUTYLCYCLOHEXYL ACETATE	32210-23-4	Experimental Biodegradation	28 days	Carbon dioxide evolution	75 %CO2 evolution/THCO2 evolution	EC C.4.C. CO2 Evolution Test
Amyl Cinnamal	122-40-7	Experimental Biodegradation	28 days	Biological Oxygen Demand	90 %BOD/ThOD	OECD 301F - Manometric Respiro
Amyl Salicylate	2050-08-0	Experimental Biodegradation	28 days	Biological Oxygen Demand	86 %BOD/ThOD	OECD 301F - Manometric Respiro
CITRONELLOL	106-22-9	Experimental Biodegradation	28 days	Biological Oxygen Demand	80-90 %BOD/ThOD	similar to OECD 301F
CITRONELLOL	106-22-9	Estimated Photolysis		Photolytic half-life (in air)	3.9 hours (t 1/2)	
Fragrance Component 2	1222-05-5	Experimental Biodegradation	28 days	Carbon dioxide evolution	2 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
Fragrance Component 2	1222-05-5	Experimental Photolysis		Photolytic half-life (in air)	1.1 days (t 1/2)	

Fragrance Component 2	1222-05-5	Experimental Soil Metabolism Aerobic		Half-life (t 1/2)	239 days (t 1/2)	
Fragrance Component 23	17511-60-3	Experimental Biodegradation	56 days	Carbon dioxide evolution	21.2 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
Fragrance Component 46	Trade Secret	Experimental Biodegradation	28 days	Carbon dioxide evolution	100 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
Fragrance Component 6	Trade Secret	Experimental Biodegradation	28 days	Carbon dioxide evolution	76 %CO2 evolution/THCO2 evolution	OECD 310 CO2 Headspace
Fragrance Component 6	Trade Secret	Experimental Aquatic Inherent Biodegrad.	10 days	Percent degraded	> 90 %removal of DOC	similar to OECD 302B
Fragrance Component 6	Trade Secret	Modeled Photolysis		Photolytic half-life (in air)	4.1 days (t 1/2)	Episuite™
Hexyl Cinnamal	101-86-0	Experimental Biodegradation	28 days	Biological Oxygen Demand	97 %BOD/ThOD	OECD 301F - Manometric Respiro
Hexyl Cinnamal	101-86-0	Estimated Photolysis		Photolytic half-life (in air)	7 hours (t 1/2)	
Hydroxyisohexyl 3-Cyclohexene Carboxaldehyde	31906-04-4	Experimental Biodegradation	28 days	Biological Oxygen Demand	61 %BOD/ThOD	OECD 301C - MITI (I)
Linalool	78-70-6	Experimental Biodegradation	28 days	Biological Oxygen Demand	90 %BOD/ThOD	OECD 301C - MITI (I)
Linalool	78-70-6	Experimental Aquatic Inherent Biodegrad.	7 days	Dissolv. Organic Carbon Deplet	100 %removal of DOC	similar to OECD 302B
Linalool	78-70-6	Experimental Photolysis		Photolytic half-life (in air)	2.4 hours (t 1/2)	
PHENYLETHANOL	60-12-8	Experimental Biodegradation	14 days	Biological Oxygen Demand	87 %BOD/ThOD	OECD 301C - MITI (I)
Terpineol	98-55-5	Experimental Biodegradation	14 days	Biological Oxygen Demand	84.6 %BOD/ThOD	OECD 301C - MITI (I)
TERPINEOL ACETATE	8007-35-0	Estimated Biodegradation	28 days	Carbon dioxide evolution	87.3 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
TERPINEOL ACETATE	8007-35-0	Estimated Photolysis		Photolytic half-life (in air)	4.07 days (t 1/2)	
Verdyl Acetate	5413-60-5	Analogous Compound Biodegradation	56 days	Carbon dioxide evolution	21.2 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
COUMARIN	91-64-5	Experimental Biodegradation	28 days	Biological Oxygen Demand	90 %BOD/ThOD	OECD 301F - Manometric Respiro
Fragrance Component 40	127-91-3	Estimated Biodegradation	28 days	Biological Oxygen Demand	92 %BOD/ThOD	OECD 301C - MITI (I)
Fragrance Component 40	127-91-3	Experimental Photolysis		Photolytic half-life (in air)	4.9 hours (t 1/2)	
Fragrance Component 45	2705-87-5	Experimental Biodegradation	28 days	Biological Oxygen Demand	86 %BOD/ThOD	OECD 301D - Closed Bottle Test
Fragrance Component 45	2705-87-5	Experimental Hydrolysis		Hydrolytic half-life (pH 7)	90.8 hours (t 1/2)	OECD 111 Hydrolysis func of pH
Benzenepropanal, 4-ethyl-.alpha.,.alpha.-dimethyl-	67634-15-5	Analogous Compound Biodegradation	28 days	Biological Oxygen Demand	2 %BOD/ThOD	OECD 301D - Closed Bottle Test
D-LIMONENE	5989-27-5	Experimental Biodegradation	14 days	Biological Oxygen Demand	98 %BOD/ThOD	OECD 301C - MITI (I)
D-LIMONENE	5989-27-5	Experimental Biodegradation	14 days	Dissolv. Organic Carbon Deplet	>93.8 %removal of DOC	OECD 303A - Simulated Aerobic
Fragrance Component 25	101-84-8	Experimental Biodegradation	20 days	Biological Oxygen Demand	76 %BOD/ThOD	
Fragrance Component 25	101-84-8	Experimental Aquatic Inherent Biodegrad.	7 days	Percent degraded	94 %degraded	OECD 302A - Modified SCAS Test
Fragrance Component 25	101-84-8	Experimental Photolysis		Photolytic half-life (in air)	3.2 days (t 1/2)	

Fragrance Component 30	110-41-8	Experimental Biodegradation	22 days	Biological Oxygen Demand	68 %BOD/ThOD	OECD 301F - Manometric Respiro
Fragrance Component 32	Trade Secret	Experimental Biodegradation	14 days	Biological Oxygen Demand	88 %BOD/ThOD	OECD 301C - MITI (I)
Fragrance Component 32	Trade Secret	Experimental Photolysis		Photolytic half-life (in air)	2.1 days (t 1/2)	
Fragrance Component 53	Trade Secret	Modeled Biodegradation	28 days	Biological Oxygen Demand	71 %BOD/ThOD	Catalogic™
Fragrance Component 8	Trade Secret	Experimental Biodegradation	28 days	Carbon dioxide evolution	65.5 %CO2 evolution/THCO2 evolution	OECD 301B - Mod. Sturm or CO2
Fragrance Component 8	Trade Secret	Experimental Aquatic Inherent Biodegrad.	35 days	Biological Oxygen Demand	85 %BOD/ThOD	OECD 302C - Modified MITI (II)
GERANYL ACETATE	105-87-3	Experimental Biodegradation	28 days	Biological Oxygen Demand	>70.14 %BOD/ThOD	
GERANYL ACETATE	105-87-3	Experimental Hydrolysis		Hydrolytic half-life	1539 hours (t 1/2)	OECD 111 Hydrolysis func of pH

12.3. Bioaccumulative potential

Material	CAS No.	Test Type	Duration	Study Type	Test Result	Protocol
C8-10 Alcohols Ethoxylated Propoxylated	68603-25-8	Estimated Bioconcentration		Log of Octanol/H2O part. coeff	2.1	
Fragrance Component 18	Trade Secret	Experimental BCF - Fish	42 days	Bioaccumulation Factor	4.6	OECD305-Bioconcentration
Fragrance Component 18	Trade Secret	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	-0.462	EC A.8 Partition Coefficient
Terpenes and terpenoids, sweet orange-oil	68647-72-3	Modeled Bioconcentration		Bioaccumulation Factor	620	Catalogic™
Terpenes and terpenoids, sweet orange-oil	68647-72-3	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	5.3	OECD 117 log Kow HPLC method
Diethyl Phthalate	84-66-2	Experimental BCF - Fish	21 days	Bioaccumulation Factor	117	
Diethyl Phthalate	84-66-2	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.2	OECD 117 log Kow HPLC method
2-Phenoxyethanol	122-99-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.2	EC A.8 Partition Coefficient
4-T-BUTYLCYCLOHEXYL ACETATE	32210-23-4	Modeled Bioconcentration		Bioaccumulation Factor	15	Catalogic™
4-T-BUTYLCYCLOHEXYL ACETATE	32210-23-4	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	4.8	OECD 117 log Kow HPLC method
Amyl Cinnamal	122-40-7	Modeled Bioconcentration		Bioaccumulation Factor	580	Catalogic™
Amyl Cinnamal	122-40-7	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.498	OECD 117 log Kow HPLC method
Amyl Salicylate	2050-08-0	Modeled Bioconcentration		Bioaccumulation Factor	19	Catalogic™
Amyl Salicylate	2050-08-0	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	4.4	OECD 117 log Kow HPLC method
CITRONELLOL	106-22-9	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	3.41	
Fragrance Component 2	1222-05-5	Experimental BCF - Fish	28 days	Bioaccumulation Factor	1584	OECD305-Bioconcentration
Fragrance Component 2	1222-05-5	Experimental Bioconcentration		Log of Octanol/H2O part.	5.9	OECD 117 log Kow HPLC method

				coeff		
Fragrance Component 23	17511-60-3	Estimated Bioconcentration		Bioaccumulation Factor	6.0	
Fragrance Component 46	Trade Secret	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.96	
Fragrance Component 6	Trade Secret	Modeled Bioconcentration		Bioaccumulation Factor	9.3	Catalogic™
Hexyl Cinnamal	101-86-0	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	5.3	
Hydroxyisohexyl 3-Cyclohexene Carboxaldehyde	31906-04-4	Estimated Bioconcentration		Log of Octanol/H2O part. coeff	2.1	
Linalool	78-70-6	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.84	similar to OECD 107
PHENYLETHANOL	60-12-8	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.3	OECD 117 log Kow HPLC method
Terpineol	98-55-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	2.98	
TERPINEOL ACETATE	8007-35-0	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	3.96	
Verdyl Acetate	5413-60-5	Modeled Bioconcentration		Bioaccumulation Factor	5	Catalogic™
Verdyl Acetate	5413-60-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	0.924	830.7550 Part.Coef Shake Flask
COUMARIN	91-64-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.39	
Fragrance Component 40	127-91-3	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	4.16	
Fragrance Component 45	2705-87-5	Modeled Bioconcentration		Bioaccumulation Factor	7.9	Catalogic™
Fragrance Component 45	2705-87-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	4.28	OECD 107 log Kow shke flsk mtd
Benzenepropanal, 4-ethyl-.alpha.,.alpha.-dimethyl-	67634-15-5	Analogous Compound BCF - Fish	28 days	Bioaccumulation Factor	<132	similar to OECD 305
Benzenepropanal, 4-ethyl-.alpha.,.alpha.-dimethyl-	67634-15-5	Analogous Compound Bioconcentration		Log of Octanol/H2O part. coeff	4.1	similar to OECD 117
D-LIMONENE	5989-27-5	Modeled Bioconcentration		Bioaccumulation Factor	2100	Catalogic™
D-LIMONENE	5989-27-5	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	4.57	
Fragrance Component 25	101-84-8	Experimental BCF - Fish	56 days	Bioaccumulation Factor	≤594	OECD305-Bioconcentration
Fragrance Component 25	101-84-8	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	4.21	
Fragrance Component 30	110-41-8	Modeled Bioconcentration		Bioaccumulation Factor	4.7	Catalogic™
Fragrance Component 30	110-41-8	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	4.9	OECD 117 log Kow HPLC method
Fragrance Component 32	Trade Secret	Modeled Bioconcentration		Bioaccumulation Factor	275	Catalogic™

Fragrance Component 32	Trade Secret	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	4.8	EC A.8 Partition Coefficient
Fragrance Component 53	Trade Secret	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	1.96	OECD 117 log Kow HPLC method
Fragrance Component 8	Trade Secret	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	3.4	OECD 117 log Kow HPLC method
GERANYL ACETATE	105-87-3	Modeled Bioconcentration		Bioaccumulation Factor	10	Catalogic™
GERANYL ACETATE	105-87-3	Experimental Bioconcentration		Log of Octanol/H2O part. coeff	4.04	

12.4. Mobility in soil
Please contact manufacturer for more details

12.5 Other adverse effects
No information available

SECTION 13: Disposal considerations

13.1. Disposal methods

According to the Environmental Quality (Scheduled Wastes) Regulations 2005, scheduled waste has to be sent to a prescribed premise for recycling, treatment or disposal. Please approach Kualiti Alam for proper schedule waste classification and disposal.

SECTION 14: Transport Information

Marine Transport (IMDG)

UN Number:UN3082
Proper Shipping Name:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: None assigned.
Hazard Class/Division:9
Subsidiary Risk: None assigned.
Packing Group:III
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:
None assigned.

Air Transport (IATA)

UN Number:UN3082
Proper Shipping Name:ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
Technical Name: None assigned.
Hazard Class/Division:9
Subsidiary Risk: None assigned.
Packing Group:III
Limited Quantity: None assigned.
Marine Pollutant: None assigned.
Marine Pollutant Technical Name: None assigned.
Other Dangerous Goods Descriptions:

None assigned.

Transportation classifications are provided as a customer service. As for shipping, YOU remain responsible for complying with all applicable laws and regulations, including proper transportation classification and packaging. 3M's transportation classifications are based on product formulation, packaging, 3M policies and 3M's understanding of applicable current regulations. 3M does not guarantee the accuracy of this classification information. This information applies only to transportation classification and not the packaging, labeling or marking requirements. The above information is only for reference. If you are shipping by air or ocean, YOU are advised to check & meet applicable regulatory requirements.

SECTION 15: Regulatory information

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

Global inventory status
Contact 3M for more information. The components of this material are in compliance with the provisions of Philippines RA 6969 requirements. Certain restrictions may apply. Contact the selling division for additional information. The components of this product are in compliance with the new substance notification requirements of CEPA. This product complies with Measures on Environmental Management of New Chemical Substances. All ingredients are listed on or exempt from on China IECSC inventory. The components of this product are in compliance with the chemical notification requirements of TSCA. All required components of this product are listed on the active portion of the TSCA Inventory.

SECTION 16: Other information

DISCLAIMER: The information in this Safety Data Sheet (SDS) is based on our experience and is correct to the best of our knowledge at the date of publication, but we do not accept any liability for any loss, damage or injury resulting from its use (except as required by law). The information may not be valid for any use not referred to in this SDS or use of the product in combination with other materials. For these reasons, it is important that customers carry out their own evaluation to satisfy themselves as to the suitability of the product for their own intended applications. In addition, this SDS is being provided to convey health and safety information. If you are the importer of record of this product into Malaysia, you are responsible for all applicable regulatory requirements, including, but not limited to, product registrations/notifications, substance volume tracking, and potential substance registration/notification.

3M Malaysia SDSs are available at www.3M.com.my