SAFETY DATA SHEET

Fragrance 49387628

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

1.1 Product identifier

Product code : Fragrance 49387628

Product name : APPLE & CINNAMON MOD AFL

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

Fragrance. Restricted to professional users. Industrial use only.

1.3 Details of the supplier of the safety data sheet

Supplier's details : drom fragrances GmbH & Co. KG
Oberdiller Straße 18
tel. +49 89 74425-0
fax. +49 89 7934966
D-82065 Baierbrunn

e-mail address of person responsible for this SDS : safety@drom.com

1.4 Emergency telephone number

National advisory body/Poison Center

Telephone number : www.rshm.gov.tr

Supplier

Emergency telephone number (with hours of operation) : +49 89 74425 288
9h - 17h (Mo - Fr)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Skin Sens. 1, H317
Aquatic Chronic 2, H411

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : H317 - May cause an allergic skin reaction.
H411 - Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : P280 - Wear protective gloves.
P273 - Avoid release to the environment.
P261 - Avoid breathing vapor.

Response : P302 + P352 - IF ON SKIN: Wash with plenty of soap and water.
P333 + P313 - If skin irritation or rash occurs: Get medical attention.

SECTION 2: Hazards identification

Storage : Not applicable.

Disposal : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazardous ingredients : cineole
2,4-dimethylcyclohex-3-en-1-carbaldehyde
α-methylcinnamaldehyde
dipentene
Cinnamyl alcohol [trans-3-Phenyl-2-propen-1-ol]
cinnamaldehyde
eugenol
ethyl 2,3-epoxy-3-phenylbutyrate
piperonal
cinnamonitrile
p-tolylacetaldehyde

Supplemental label elements : Not applicable.

2.3 Other hazards

Other hazards which do not result in classification : None known.

SECTION 3: Composition/information on ingredients

3.1 Substances : Not applicable.

3.2 Mixtures : Mixture

Product/ingredient name	Identifiers	%	Regulation (EC) No. 1272/2008 [CLP]	Type
2-tert-butylcyclohexyl acetate	REACH #: 01-2119970713-33 EC: 201-828-7 EC: 243-718-1 CAS: 88-41-5 CAS: 20298-69	42.00	Aquatic Chronic 2, H411	[1]
cineole	EC: 207-431-5 CAS: 470-82-6	3.72	Flam. Liq. 3, H226 Skin Sens. 1, H317	[1]
Diethyl malonate	EC: 203-305-9 CAS: 105-53-3	2.40	Eye Irrit. 2, H319	[1]
α-methylcinnamaldehyde	EC: 202-938-8 CAS: 101-39-3	1.80	Skin Sens. 1B, H317	[1]
2,4-dimethylcyclohex-3-en-1-carbaldehyde	EC: 268-264-1 CAS: 68039-49-6	1.80	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317 Aquatic Chronic 3, H412	[1]
dipentene	EC: 205-341-0 CAS: 138-86-3 Index: 601-029-00-7	1.79	Flam. Liq. 3, H226 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	[1]
Cinnamyl alcohol [trans-3-Phenyl-2-propen-1-ol]	EC: 203-212-3 CAS: 104-54-1	1.70	Skin Sens. 1B, H317	[1]
2-ethyl-3-hydroxy-4-pyrone	EC: 225-582-5	1.40	Acute Tox. 4, H302	[1]

SECTION 3: Composition/information on ingredients

	CAS: 4940-11-8			
caryophyllene	EC: 201-746-1 CAS: 87-44-5	1.40	Asp. Tox. 1, H304	[1]
undecan-4-olide	REACH #: 01-2119959333-34 EC: 203-225-4 CAS: 104-67-6	1.00	Aquatic Chronic 3, H412	[1]
cinnamaldehyde	EC: 203-213-9 CAS: 104-55-2	1.00	Acute Tox. 4, H312 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1A, H317 **See Section 16 for the full text of the H statements declared above.**	[1]

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment, are PBTs or vPvBs or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard
[2] Substance with a workplace exposure limit
[3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
[4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
[5] Substance of equivalent concern

Occupational exposure limits, if available, are listed in Section 8.

Hydrocarbon. (Content) : 3.54%

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

SECTION 4: First aid measures

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms : Not available.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

5.3 Advice for firefighters

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

SECTION 6: Accidental release measures

6.2 Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

6.3 Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Seveso Directive - Reporting thresholds (in tonnes)

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
E2: Hazardous to the aquatic environment - Chronic 2 C9ii: Toxic for the environment	200 200	500 500

7.3 Specific end use(s)

Recommendations : Industrial use only.

SECTION 8: Exposure controls/personal protection

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

8.1 Control parameters

Occupational exposure limits

No exposure limit value known.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
undecan-4-olide	DNEL	Long term Inhalation	19 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	5.38 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	4.68 mg/m³	Consumers	Systemic
	DNEL	Long term Dermal	2.7 mg/kg bw/day	Consumers	Systemic
	DNEL	Long term Oral	2.7 mg/kg bw/day	Consumers	Systemic

PNECs

Product/ingredient name	Compartment Detail	Value	Method Detail
undecan-4-olide	Fresh water	5.85 µg/l	-
	Marine water	0.585 µg/l	-
	Intermittent release	0.0585 mg/l	-
	Fresh water sediment	0.628 mg/kg	-
	Marine water sediment	0.063 mg/kg	-
	Sewage Treatment Plant	80 mg/l	-
	Soil	0.122 mg/kg	-

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

SECTION 8: Exposure controls/personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state : Liquid.

Color : Characteristic.

Odor : Characteristic.

Odor threshold : Not available.

pH : Not available.

Melting point/freezing point : Not available.

Initial boiling point and boiling range : Not available.

Flash point : Closed cup: 72°C

Evaporation rate : Not available.

Upper/lower flammability or explosive limits : Not available.

Vapor pressure : 0.36 hPa

Vapor density : Not available.

Density : 0.967 to 0.977 g/cm³ [20°C]

Solubility in water : Non water-soluble liquid

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Kinematic (40°C): <0.07 cm^2/s (Estimated.)

Explosive properties : Not available.

Oxidizing properties : Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity : No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability : The product is stable.

10.3 Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : No specific data.

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
2-tert-butylcyclohexyl acetate	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	4600 mg/kg	-
cineole	LD50 Oral	Rat	2480 mg/kg	-
Diethyl malonate	LD50 Dermal	Rabbit	>5000 mg/kg	-
α-methylcinnamaldehyde	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	2050 mg/kg	-
2,4-dimethylcyclohex-3-en-1-carbaldehyde	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	3900 mg/kg	-
dipentene	LD50 Oral	Rat	5300 mg/kg	-
Cinnamyl alcohol [trans-3-Phenyl-2-propen-1-ol]	LD50 Dermal	Rabbit	>5 g/kg	-
2-ethyl-3-hydroxy-4-pyrone	LD50 Dermal	Rabbit	>5 g/kg	-
	LD50 Oral	Rat	1150 mg/kg	-
caryophyllene	LD50 Oral	Rat	>5000 mg/kg	-
undecan-4-olide	LD50 Dermal	Rabbit	>2000 mg/kg	-
	LD50 Oral	Rat	18500 mg/kg	-
cinnamaldehyde	LD50 Dermal	Rabbit	620 mg/kg	-
	LD50 Oral	Rat	2220 mg/kg	-

Acute toxicity estimates

SECTION 11: Toxicological information

Route	ATE value
Oral	63258.8 mg/kg
Dermal	110015.3 mg/kg

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Diethyl malonate	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Cinnamyl alcohol [trans-3-Phenyl-2-propen-1-ol]	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
cinnamaldehyde	Skin - Severe irritant	Human	-	48 hours 40 milligrams	-

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Cinnamyl alcohol [trans-3-Phenyl-2-propen-1-ol]	skin	Human	Sensitizing
cinnamaldehyde	skin	Mouse	Sensitizing
	skin	Guinea pig	Sensitizing

Aspiration hazard

Product/ingredient name	Result
dipentene	ASPIRATION HAZARD - Category 1
caryophyllene	ASPIRATION HAZARD - Category 1

Potential acute health effects

Eye contact : No known significant effects or critical hazards.

Inhalation : No known significant effects or critical hazards.

Skin contact : May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

SECTION 11: Toxicological information

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

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.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
2-tert-butylcyclohexyl acetate	Acute EC50 17 mg/l	Aquatic plants	72 hours
	Acute EC50 17 mg/l	Daphnia	48 hours
	Acute LC50 1.7 mg/l	Fish	96 hours
cineole	Acute LC50 102000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Diethyl malonate	Acute LC50 15400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
α-methylcinnamaldehyde	Acute EC50 9.9 mg/l	Daphnia	48 hours
2,4-dimethylcyclohex-3-en-1-carbaldehyde	Acute EC50 22.4 mg/l	Daphnia	48 hours
dipentene	Acute EC50 28.2 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute EC50 20.2 mg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Acute IC50 13.798 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 31 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 38.5 mg/l Fresh water	Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
Cinnamyl alcohol [trans-3-Phenyl-2-propen-1-ol]	Acute EC50 >10 mg/l	Daphnia	48 hours
	Acute IC50 >10 mg/l	Algae	72 hours
	Acute LC50 >10 mg/l	Fish	96 hours
2-ethyl-3-hydroxy-4-pyrone	Acute EC50 27 mg/l	Daphnia	48 hours
undecan-4-olide	Acute EC10 0.876 mg/l	Algae	48 hours
	Acute EC50 5.85 mg/l	Daphnia	48 hours

SECTION 12: Ecological information

	Acute IC50 5.94 mg/l	Algae	48 hours
	Acute LC50 5.5 mg/l	Fish	96 hours
cinnamaldehyde	Acute EC50 7.05 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 >10 mg/l	Fish	96 hours
	Acute LC50 1.67 ppm Fresh water	Fish - Oncorhynchus mykiss - Juvenile (Fledgling, Hatchling, Weanling)	96 hours

12.2 Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
2-tert-butylcyclohexyl acetate	OECD 301F Ready Biodegradability - Manometric Respirometry Test	43 % - Not readily - 28 days	-	-
cineole	OECD 301F Ready Biodegradability - Manometric Respirometry Test	82 % - Readily - 28 days	-	-
Diethyl malonate	OECD 301F Ready Biodegradability - Manometric Respirometry Test	100 % - Readily - 28 days	-	-
α-methylcinnamaldehyde	OECD 301D Ready Biodegradability - Closed Bottle Test	63 % - Readily - 28 days	-	-
2,4-dimethylcyclohex-3-en-1-carbaldehyde	OECD 301F Ready Biodegradability - Manometric Respirometry Test	<60 % - Not readily - 28 days	-	-
Cinnamyl alcohol [trans-3-Phenyl-2-propen-1-ol]	OECD 301B Ready Biodegradability - CO_2 Evolution Test	98 % - Readily - 28 days	-	-
2-ethyl-3-hydroxy-4-pyrone	OECD 301B Ready Biodegradability - CO_2 Evolution Test	>60 % - Readily - 28 days	-	-
caryophyllene	OECD 301F Ready	70 % - Readily - 28 days	-	-

SECTION 12: Ecological information

	Biodegradability - Manometric Respirometry Test			
undecan-4-olide	OECD 301D Ready Biodegradability - Closed Bottle Test	82 % - Readily - 28 days	-	-
cinnamaldehyde	OECD 301E Ready Biodegradability - Modified OECD Screening Test	100 % - Readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
2-tert-butylcyclohexyl acetate	-	-	Not readily
cineole	-	-	Readily
Diethyl malonate	-	-	Readily
α-methylcinnamaldehyde	-	-	Readily
2,4-dimethylcyclohex-3-en-1-carbaldehyde	-	-	Not readily
Cinnamyl alcohol [trans-3-Phenyl-2-propen-1-ol]	-	-	Readily
2-ethyl-3-hydroxy-4-pyrone	-	-	Readily
caryophyllene	-	-	Readily
undecan-4-olide	-	-	Readily
cinnamaldehyde	-	-	Readily

12.3 Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
cineole	2.74	-	low
Diethyl malonate	0.96	-	low
α-methylcinnamaldehyde	2.4	-	low
dipentene	4.57	-	high
Cinnamyl alcohol [trans-3-Phenyl-2-propen-1-ol]	1.636	5	low
2-ethyl-3-hydroxy-4-pyrone	0.63	-	low
undecan-4-olide	3.6	-	low
cinnamaldehyde	1.83	8	low

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

SECTION 12: Ecological information

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

12.6 Other adverse effects : No known significant effects or critical hazards.

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods

Product

Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of 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)

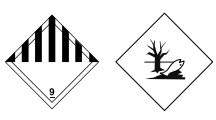
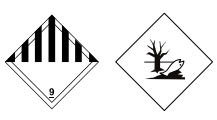
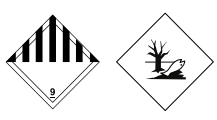
Waste code	Waste designation
16 03 05*	organic wastes containing dangerous substances

Packaging

Methods of disposal : The generation of waste should be avoided or minimized wherever 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.

SECTION 14: Transport information

	ADR/RID	IMDG	IATA
14.1 UN number	UN3082	UN3082	UN3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-tert-butylcyclohexyl acetate, dipentene)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-tert-butylcyclohexyl acetate, dipentene)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-tert-butylcyclohexyl acetate, dipentene)
14.3 Transport hazard class(es)	9 	9 	9 
14.4 Packing group	III	III	III
14.5 Environmental hazards	Yes.	Marine pollutant	Yes.

SECTION 14: Transport information

Additional information	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8. **Tunnel code** (E)	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.	This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

14.6 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 spillage.

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

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorization

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

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

Registration status

All components are listed : Australia inventory (AICS)

China inventory (IECSC)

Philippines inventory (PICCS)

United States inventory (TSCA 8b)

Europe inventory (EINECS/ELINCS/NLP)

15.2 Chemical Safety Assessment : This product contains substances for which Chemical Safety Assessments are still required.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

SECTION 16: Other information

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
Skin Sens. 1, H317	Calculation method
Aquatic Chronic 2, H411	Calculation method

Full text of abbreviated H statements :

H226	Flammable liquid and vapor.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
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.

Full text of classifications [CLP/GHS] :

Acute Tox. 4, H302	ACUTE TOXICITY (oral) - Category 4
Acute Tox. 4, H312	ACUTE TOXICITY (dermal) - Category 4
Aquatic Acute 1, H400	AQUATIC HAZARD (ACUTE) - Category 1
Aquatic Chronic 1, H410	AQUATIC HAZARD (LONG-TERM) - Category 1
Aquatic Chronic 2, H411	AQUATIC HAZARD (LONG-TERM) - Category 2
Aquatic Chronic 3, H412	AQUATIC HAZARD (LONG-TERM) - Category 3
Asp. Tox. 1, H304	ASPIRATION HAZARD - Category 1
Eye Irrit. 2, H319	SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
Flam. Liq. 3, H226	FLAMMABLE LIQUIDS - Category 3
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1, H317	SKIN SENSITIZATION - Category 1
Skin Sens. 1A, H317	SKIN SENSITIZATION - Category 1A
Skin Sens. 1B, H317	SKIN SENSITIZATION - Category 1B

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Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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