

## Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations  
Issue date: 1/26/2024 Version: 1.0

### SECTION 1: Identification

#### 1.1. Identification

Product form : Mixture  
Product name : THE PECULIAR PINE FRAGRANCE OIL  
Product code : DDFO1965

#### 1.2. Recommended use and restrictions on use

No additional information available

#### 1.3. Supplier

Black Tie Barn LLC  
1317 E County Road H  
Suite E  
Liberty, MO 64068  
<https://www.blacktiebarn.com>

### SECTION 2: Hazard(s) identification

#### 2.1. Classification of the substance or mixture


##### GHS US classification

Flammable liquids, Category 4	H227	Combustible liquid
Acute toxicity (oral), Category 4	H302	Harmful if swallowed.
Acute toxicity (dermal), Category 4	H312	Harmful in contact with skin.
Skin corrosion/irritation, Category 2	H315	Causes skin irritation.
Serious eye damage/eye irritation, Category 2A	H319	Causes serious eye irritation.
Skin sensitisation, Category 1	H317	May cause an allergic skin reaction.

Full text of H-statements: see section 16

#### 2.2. GHS Label elements, including precautionary statements

##### GHS US labelling

Hazard pictograms (GHS US) : 

Signal word (GHS US) : Warning

Hazard statements (GHS US) : H227 - Combustible liquid  
H302+H312 - Harmful if swallowed or in contact with skin  
H315 - Causes skin irritation.  
H317 - May cause an allergic skin reaction.  
H319 - Causes serious eye irritation.

Precautionary statements (GHS US) : P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No

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smoking.

P261 - Avoid breathing dust/fume/gas/mist/vapours/spray.

P264 - Wash hands, forearms and face thoroughly after handling.

P270 - Do not eat, drink or smoke when using this product.

P272 - Contaminated work clothing must not be allowed out of the workplace.

P280 - Wear protective gloves/protective clothing/eye protection/face protection.

P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell.

P302+P352 - If on skin: Wash with plenty of water. P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P312 - Call a poison center or doctor if you feel unwell.

P321 - Specific treatment (see supplemental first aid instruction on this label).

P322 - Specific treatment (see supplemental first aid instruction on this label)

P330 - Rinse mouth.

P332+P313 - If skin irritation occurs: Get medical advice/attention.

P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 - If eye irritation persists: Get medical advice/attention.

P362+P364 - Take off contaminated clothing and wash it before reuse.

P363 - Wash contaminated clothing before reuse.

P370+P378 - In case of fire: Use media other than water to extinguish.

P403+P235 - Store in a well-ventilated place. Keep cool. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

### 2.3. Other hazards which do not result in classification

No additional information available

### 2.4. Unknown acute toxicity (GHS US)

Not applicable

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Not applicable

### 3.2. Mixtures

Name	Product identifier	%	GHS US classification
Cedrol methyl ether	CAS-No.: 19870-74-7	15–25	Skin Sens. 1B, H317
Isoborneol	CAS-No.: 124-76-5	5 – 10	Flam. Sol. 1, H228 Skin Irrit. 2, H315
4-(p-Hydroxyphenyl)-2-butanone	CAS-No.: 5471-51-2	5 – 10	Acute Tox. 4 (Oral), H302
p-tert-Butyldihydrocinnamaldehyde	CAS-No.: 18127-01-0	1 – 5	Flam. Liq. 4, H227 Acute Tox. 1 (Oral), H300 Skin Irrit. 2, H315 Skin Sens. 1B, H317
4-tert-butylcyclohexyl acetate	CAS-No.: 32210-23-4	1 – 5	Skin Sens. 1B, H317

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Name	Product identifier	%	GHS US classification
CAMPHOR GUM POWDER	CAS-No.: 76-22-2	1 – 5	Flam. Sol. 2, H228 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Irrit. 2, H315 Eye Dam. 1, H318
Lauric aldehyde	CAS-No.: 112-54-9	1 – 5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317
Methyl atrarate	CAS-No.: 4707-47-5	1 – 5	Skin Sens. 1B, H317
Camphene	CAS-No.: 79-92-5	1 – 5	Flam. Sol. 2, H228 Eye Irrit. 2, H319
Ethyl maltol	CAS-No.: 4940-11-8	1 – 5	Acute Tox. 4 (Oral), H302
alpha-Methylbenzyl acetate	CAS-No.: 93-92-5	1 – 5	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302
Diethyl malonate	CAS-No.: 105-53-3	1 – 5	Flam. Liq. 4, H227 Eye Irrit. 2, H319
Decanal	CAS-No.: 112-31-2	1 – 5	Flam. Liq. 4, H227 Eye Irrit. 2, H319
Cedarwood oil, Texas	CAS-No.: 68990-83-0	1 – 5	Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304
dl-Citronellol	CAS-No.: 106-22-9	1 – 5	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317
2-methylundecanal	CAS-No.: 110-41-8	1 – 5	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Skin Sens. 1B, H317
cis-3-Hexenol	CAS-No.: 928-96-1	1 – 5	Flam. Liq. 3, H226 Eye Irrit. 2, H319
alpha-Pinene	CAS-No.: 80-56-8	1 – 5	Flam. Liq. 3, H226 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Skin Sens. 1B, H317 Asp. Tox. 1, H304
Thymol	CAS-No.: 89-83-8	1 – 5	Acute Tox. 4 (Oral), H302 Skin Corr. 1B, H314 Eye Dam. 1, H318
benzyl benzoate	CAS-No.: 120-51-4	1 – 5	Acute Tox. 4 (Oral), H302

Full text of hazard classes and H-statements : see section 16

## SECTION 4: First-aid measures

### 4.1. Description of first aid measures

First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.

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First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center or a doctor if you feel unwell.

### 4.2. Most important symptoms and effects (acute and delayed)

No additional information available

### 4.3. Immediate medical attention and special treatment, if necessary

Treat symptomatically.

## SECTION 5: Fire-fighting measures

### 5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Water spray. Dry powder. Foam. Carbon dioxide.

### 5.2. Specific hazards arising from the chemical

Hazardous decomposition products in case of fire : Toxic fumes may be released.

### 5.3. Special protective equipment and precautions for fire-fighters

Protection during firefighting : Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

## SECTION 6: Accidental release measures

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

#### 6.1.1. For non-emergency personnel

Emergency procedures : Ventilate spillage area.

#### 6.1.2. For emergency responders

Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

### 6.2. Environmental precautions

Avoid release to the environment.

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

Methods for cleaning up	: Take up liquid spill into absorbent material.
Other information	: Dispose of materials or solid residues at an authorized site.

### 6.4. Reference to other sections

For further information refer to section 13.

## SECTION 7: Handling and storage

### 7.1. Precautions for safe handling

Precautions for safe handling	: Ensure good ventilation of the work station. Wear personal protective equipment.
Hygiene measures	: Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

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

Storage conditions : Store in a well-ventilated place. Keep cool.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### THE PECULIAR PINE FRAGRANCE OIL

No additional information available

#### alpha-Pinene (80-56-8)

No additional information available

#### Thymol (89-83-8)

No additional information available

#### cis-3-Hexenol (928-96-1)

No additional information available

#### 2-methylundecanal (110-41-8)

No additional information available

#### Decanal (112-31-2)

No additional information available

#### Cedarwood oil, Texas (68990-83-0)

No additional information available

#### dL-Citronellol (106-22-9)

No additional information available

#### Diethyl malonate (105-53-3)

No additional information available

#### benzyl benzoate (120-51-4)

No additional information available

#### alpha-Methylbenzyl acetate (93-92-5)

No additional information available

#### Ethyl maltol (4940-11-8)

No additional information available

#### Methyl atrarate (4707-47-5)

No additional information available

#### Camphene (79-92-5)

No additional information available

#### Lauric aldehyde (112-54-9)

No additional information available

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### CAMPHOR GUM POWDER (76-22-2)

#### USA - ACGIH - Occupational Exposure Limits

Local name	Camphor, synthetic
ACGIH OEL TWA [ppm]	2 ppm
ACGIH OEL STEL [ppm]	3 ppm
Remark (ACGIH)	TLV® Basis: Eye & URT irr; anosmia. Notations: A4 (Not classifiable as a Human Carcinogen)
Regulatory reference	ACGIH 2023

#### USA - OSHA - Occupational Exposure Limits

Local name	Camphor, synthetic
OSHA PEL TWA [1]	2 mg/m <sup>3</sup>
Regulatory reference (US-OSHA)	OSHA Annotated Table Z-1

### 4-tert-butylcyclohexyl acetate (32210-23-4)

No additional information available

### p-tert-Butyldihydrocinnamaldehyde (18127-01-0)

No additional information available

### 4-(p-Hydroxyphenyl)-2-butanone (5471-51-2)

No additional information available

### Isoborneol (124-76-5)

No additional information available

### Cedrol methyl ether (19870-74-7)

No additional information available

## 8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.  
Environmental exposure controls : Avoid release to the environment.

## 8.3. Individual protection measures/Personal protective equipment

### Hand protection:

Protective gloves

### Eye protection:

Safety glasses

### Skin and body protection:

Wear suitable protective clothing

### Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

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### Personal protective equipment symbol(s):



## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Colour	: Mixture contains one or more component(s) which have the following colour(s): Colourless Colourless to light yellow White yellow-green to dark brown Colourless to light amber Light yellow to colourless On exposure to air: yellow light yellow Colourless to white-grey
Odour	: There may be no odour warning properties, odour is subjective and inadequate to warn of overexposure. Mixture contains one or more component(s) which have the following odour: Characteristic odour Floral odour Pine odour Camphor odour Strong odour Aromatic odour Pleasant odour Sweet odour Lemon odour Mild odour Fruity odour
Odour threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 145 °F
Relative evaporation rate (butylacetate=1)	: No data available
Flammability (solid, gas)	: Not applicable.
Vapour pressure	: No data available
Relative vapour density at 20°C	: No data available
Relative density	: No data available
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive limits	: No data available
Explosive properties	: No data available
Oxidising properties	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

The product is non-reactive under normal conditions of use, storage and transport.

### 10.2. Chemical stability

Stable under normal conditions.

### 10.3. Possibility of hazardous reactions

No dangerous reactions known under normal conditions of use.

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### 10.4. Conditions to avoid

None under recommended storage and handling conditions (see section 7).

### 10.5. Incompatible materials

No additional information available

### 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 (oral) : Harmful if swallowed.  
Acute toxicity (dermal) : Harmful in contact with skin.  
Acute toxicity (inhalation) : Not classified

THE PECULIAR PINE FRAGRANCE OIL	
ATE US (oral)	500 mg/kg bodyweight
ATE US (dermal)	1100 mg/kg bodyweight
alpha-Pinene (80-56-8)	
LD50 oral rat	> 500 mg/kg bodyweight (OECD 423: Acute Oral Toxicity – Acute Toxic Class Method, Rat, Female, Experimental value, Oral, 01 day(s))
LD50 dermal rat	> 2000 mg/kg bodyweight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Skin, 14 day(s))
ATE US (oral)	500 mg/kg bodyweight
Thymol (89-83-8)	
LD50 oral rat	980 mg/kg bodyweight Animal: rat
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: other:
LD50 dermal rabbit	> 2000 mg/kg Source: IUCLID;
ATE US (oral)	980 mg/kg bodyweight
cis-3-Hexenol (928-96-1)	
LD50 oral rat	4615 mg/kg bodyweight Animal: rat, 95% CL: 4045 - 6265
LD50 dermal rabbit	> 5000 mg/kg Source: National Library of Medicine
LC50 Inhalation - Rat	> 4.99 mg/l air Animal: rat, Guideline: OECD Guideline 436 (Acute Inhalation Toxicity: Acute Toxic Class Method)
ATE US (oral)	4615 mg/kg bodyweight
2-methylundecanal (110-41-8)	
LD50 oral rat	> 5000 mg/kg (Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 8280 mg/kg (24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
Decanal (112-31-2)	
LD50 oral rat	> 33300 mg/kg Source: THOMSON
LD50 dermal rat	5.04 mg/kg Source: THOMSON



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<b>Decanal (112-31-2)</b>	
ATE US (dermal)	5.04 mg/kg bodyweight
<b>dl-Citronellol (106-22-9)</b>	
LD50 oral rat	3450 mg/kg (Rat, Inconclusive, insufficient data, Oral)
LD50 dermal rabbit	2650 mg/kg (Rabbit, Inconclusive, insufficient data, Dermal)
ATE US (oral)	3450 mg/kg bodyweight
ATE US (dermal)	2650 mg/kg bodyweight
<b>Diethyl malonate (105-53-3)</b>	
LD50 oral rat	15794 mg/kg bodyweight Animal: rat, Guideline: other:as described by Smyth et al., Amer. Ind. Hyg. Assoc. J. 23, 95-107
LD50 dermal rat	> 2000 mg/kg Source: SIDS
ATE US (oral)	15794 mg/kg bodyweight
<b>benzyl benzoate (120-51-4)</b>	
LD50 oral rat	> 2000 mg/kg bodyweight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 2000 mg/kg bw/day (Modification of Draize 1959 method, 4 h, Rabbit, Experimental value, Dermal)
ATE US (oral)	1500 mg/kg bodyweight
ATE US (dermal)	4000 mg/kg bodyweight
<b>alpha-Methylbenzyl acetate (93-92-5)</b>	
LD50 oral rat	> 5000 mg/kg Source: National Library of Medicine
LD50 dermal rabbit	> 5000 mg/kg Source: National Library of Medicine
ATE US (oral)	2000 mg/kg bodyweight
<b>Ethyl maltol (4940-11-8)</b>	
ATE US (oral)	1200 mg/kg bodyweight
<b>Methyl atrarate (4707-47-5)</b>	
LD50 oral rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rat	> 5000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
<b>Camphene (79-92-5)</b>	
LD50 oral rat	> 2000 mg/kg bodyweight Animal: other:rat and mouse
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit
<b>Lauric aldehyde (112-54-9)</b>	
LD50 oral rat	23100 mg/kg bodyweight Animal: rat
LD50 dermal rabbit	> 2000 mg/kg bodyweight Animal: rabbit
ATE US (oral)	23100 mg/kg bodyweight
<b>CAMPHOR GUM POWDER (76-22-2)</b>	
LD50 oral rat	1310 mg/kg Source: ECHA
LD50 dermal rat	> 2000 mg/kg Source: ECHA

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<b>CAMPHOR GUM POWDER (76-22-2)</b>	
ATE US (oral)	1310 mg/kg bodyweight
ATE US (gases)	4500 ppmv/4h
ATE US (vapours)	11 mg/l/4h
ATE US (dust,mist)	1.5 mg/l/4h
<b>4-tert-butylcyclohexyl acetate (32210-23-4)</b>	
LD50 oral rat	3370 mg/kg bodyweight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	> 4680 mg/kg bodyweight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
ATE US (oral)	3370 mg/kg bodyweight
<b>p-tert-Butyldihydrocinnamaldehyde (18127-01-0)</b>	
LD50 oral rat	2.66 mg/kg Source: ECHA
LD50 dermal rabbit	> 5000 mg/kg bodyweight Animal: rabbit, Animal sex: female
ATE US (oral)	2.66 mg/kg bodyweight
<b>4-(p-Hydroxyphenyl)-2-butanone (5471-51-2)</b>	
LD50 oral rat	1320 mg/kg Source: Corporate Solution From Thomson Micromedex
LD50 dermal rat	> 2000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
ATE US (oral)	1320 mg/kg bodyweight
<b>Isoborneol (124-76-5)</b>	
LD50 oral rat	3720 mg/kg Source: HSDB
LD50 dermal rabbit	> 5000 mg/kg Source: ChemIDPlus
ATE US (oral)	3720 mg/kg bodyweight
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
<b>cis-3-Hexenol (928-96-1)</b>	
NOAEL (oral, rat, 90 days)	1000 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 422 (Combined Repeated Dose Toxicity Study with the Reproduction / Developmental Toxicity Screening Test)
<b>dl-Citronellol (106-22-9)</b>	
NOAEL (oral, rat, 90 days)	2000 mg/kg bodyweight Animal: rat, Guideline: other:Specifications for the Conduct of Studies to Evaluate the Toxic and Carcinogenic Potential of Chemical, Biological, and Physical Agents in Laboratory Animals for the National Toxicology Program (NTP)
<b>benzyl benzoate (120-51-4)</b>	
NOAEL (dermal, rat/rabbit, 90 days)	781 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 410 (Repeated Dose Dermal Toxicity: 21/28-Day Study)

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<b>alpha-Methylbenzyl acetate (93-92-5)</b>	
NOAEL (oral, rat, 90 days)	150 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity in Rodents)
<b>CAMPHOR GUM POWDER (76-22-2)</b>	
NOAEL (dermal, rat/rabbit, 90 days)	250 mg/kg bodyweight Animal: rat, Guideline: other:Food and Drug Administration (FDA) Good Laboratory Practice Regulations for Nonclinical Studies (GLP Guidelines)
<b>p-tert-Butyldihydrocinnamaldehyde (18127-01-0)</b>	
NOAEL (oral, rat, 90 days)	100 mg/kg bodyweight Animal: rat, Animal sex: male, Remarks on results: not determinable
<b>4-(p-Hydroxyphenyl)-2-butanone (5471-51-2)</b>	
NOAEL (oral, rat, 90 days)	≈ 600 mg/kg bodyweight Animal: rat, Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity Study in Rodents)
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms nor to cause long-term adverse effects in the environment.

<b>alpha-Pinene (80-56-8)</b>	
LC50 - Fish [1]	0.303 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, GLP)
EC50 - Crustacea [1]	0.475 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, Locomotor effect)
<b>Thymol (89-83-8)</b>	
LC50 - Fish [1]	3.2 mg/l Test organisms (species): Pimephales promelas
EC50 - Crustacea [1]	4.5 mg/l Source: NITE
ErC50 algae	14 mg/l Source: NITE
<b>cis-3-Hexenol (928-96-1)</b>	
LC50 - Fish [1]	> 100 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	> 100 mg/l Test organisms (species): Daphnia magna
<b>2-methylundecanal (110-41-8)</b>	
LC50 - Fish [1]	0.35 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static system, Fresh water, Experimental value, GLP)
EC50 - Crustacea [1]	0.21 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, GLP)
ErC50 algae	0.18 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)
<b>Decanal (112-31-2)</b>	
LC50 - Fish [1]	1.45 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static system, Fresh water, Experimental value, GLP)

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<b>Decanal (112-31-2)</b>	
EC50 - Crustacea [1]	1.17 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Semi-static system, Fresh water, Experimental value, GLP)
LC50 - Fish [2]	1.45 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [2]	1.17 mg/l Test organisms (species): Daphnia magna
ErC50 algae	4.5 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)
<b>dl-Citronellol (106-22-9)</b>	
LC50 - Fish [1]	14.66 mg/l (DIN 38412-15, 96 h, Leuciscus idus, Static system, Fresh water, Experimental value)
EC50 - Crustacea [1]	17.48 mg/l (48 h, Daphnia magna, Static system, Fresh water, Experimental value)
<b>Diethyl malonate (105-53-3)</b>	
LC50 - Fish [1]	11.8 mg/l Source: IUCLID
LC50 - Other aquatic organisms [1]	202.3 mg/l Source: Directive 84/449/EEC, C.2., GLP, IUCLID
EC50 - Crustacea [1]	202.3 mg/l Test organisms (species): Daphnia magna
ErC50 algae	508.2 mg/l Source: Directive 88/302/EEC, GLP, IUCLID
<b>benzyl benzoate (120-51-4)</b>	
LC50 - Fish [1]	2.32 mg/l (EU Method C.1, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, GLP)
EC50 - Crustacea [1]	3.09 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
<b>alpha-Methylbenzyl acetate (93-92-5)</b>	
LC50 - Fish [1]	21 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	37 mg/l Test organisms (species): Daphnia magna
LC50 - Fish [2]	18.32 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
<b>Methyl atrarate (4707-47-5)</b>	
LC50 - Fish [1]	5.2 mg/l Test organisms (species): not specified
EC50 - Crustacea [1]	9.3 mg/l Test organisms (species): Daphnia sp.
<b>Camphene (79-92-5)</b>	
LC50 - Fish [1]	0.72 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	0.72 mg/l Test organisms (species): Daphnia magna
<b>Lauric aldehyde (112-54-9)</b>	
LC50 - Fish [1]	≈ 2.6 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	> 0.27 mg/l Test organisms (species): Daphnia magna
<b>CAMPHOR GUM POWDER (76-22-2)</b>	
LC50 - Fish [1]	33.25 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Danio rerio, Semi-static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	4.23 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Experimental value, Nominal concentration)

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### CAMPHOR GUM POWDER (76-22-2)

LC50 - Fish [2]	110 mg/l Test organisms (species): Pimephales promelas
ErC50 algae	1.71 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Nominal concentration)

### 4-tert-butylcyclohexyl acetate (32210-23-4)

LC50 - Fish [1]	8.6 mg/l (EU Method C.1, 96 h, Cyprinus carpio, Semi-static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	5.3 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value, GLP)
ErC50 algae	22 mg/l (EU Method C.3, 72 h, Desmodesmus subspicatus, Static system, Fresh water, Experimental value, GLP)

### p-tert-Butyldihydrocinnamaldehyde (18127-01-0)

LC50 - Fish [1]	1.045 mg/l Test organisms (species):
EC50 - Crustacea [1]	1.8 mg/l Test organisms (species): Daphnia magna
LC50 - Fish [2]	2.815 mg/l Test organisms (species):

### 4-(p-Hydroxyphenyl)-2-butanone (5471-51-2)

LC50 - Fish [1]	75.746 mg/l Test organisms (species):
EC50 - Crustacea [1]	< 100 mg/l Test organisms (species): Daphnia magna

### Isoborneol (124-76-5)

LC50 - Fish [1]	9.64 mg/l Source: EPISUITE
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### Cedrol methyl ether (19870-74-7)

LC50 - Fish [1]	0.373 mg/l Source: ECOSAR
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## 12.2. Persistence and degradability

### alpha-Pinene (80-56-8)

Persistence and degradability	Readily biodegradable in water.
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### 2-methylundecanal (110-41-8)

Persistence and degradability	Readily biodegradable in water.
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### Decanal (112-31-2)

Persistence and degradability	Readily biodegradable in water.
BOD (% of ThOD)	0.022 (5 day(s), Literature study)

### dl-Citronellol (106-22-9)

Persistence and degradability	Readily biodegradable in water.
Chemical oxygen demand (COD)	2.05 g O <sub>2</sub> /g substance
ThOD	2.961 g O <sub>2</sub> /g substance

### benzyl benzoate (120-51-4)

Persistence and degradability	Readily biodegradable in water.
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### CAMPHOR GUM POWDER (76-22-2)

Persistence and degradability	Readily biodegradable in water.
ThOD	2.8 g O <sub>2</sub> /g substance

### 4-tert-butylcyclohexyl acetate (32210-23-4)

Persistence and degradability	Readily biodegradable in water.
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## 12.3. Bioaccumulative potential

### alpha-Pinene (80-56-8)

BCF - Other aquatic organisms [1]	1233.1 – 1248 l/kg (BCFBAF v3.01, Read-across, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	4.487 (Experimental value, Equivalent or similar to OECD 107, 25 °C)
Bioaccumulative potential	Potential for bioaccumulation (500 ≤ BCF ≤ 5000).

### Thymol (89-83-8)

Partition coefficient n-octanol/water (Log Pow)	3.3 Source: IUCLID
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### cis-3-Hexenol (928-96-1)

Partition coefficient n-octanol/water (Log Pow)	1.61 Source: National Library of Medicine
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### 2-methylundecanal (110-41-8)

BCF - Fish [1]	2917 l/kg (Pisces, QSAR)
Partition coefficient n-octanol/water (Log Pow)	4.9 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 35 °C)
Bioaccumulative potential	Potential for bioaccumulation (4 ≤ Log Kow ≤ 5).

### Decanal (112-31-2)

BCF - Fish [1]	112 – 309 l/kg (BCFBAF v3.01, Pisces, Weight of evidence)
BCF - Other aquatic organisms [1]	420 (QSAR)
Partition coefficient n-octanol/water (Log Pow)	3.8 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 35 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

### dl-Citronellol (106-22-9)

BCF - Fish [1]	82.59 l/kg (BCFBAF v3.00, Estimated value)
Partition coefficient n-octanol/water (Log Pow)	3.41 (Practical experience/observation, EU Method A.8: Partition Coefficient, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

### Diethyl malonate (105-53-3)

Partition coefficient n-octanol/water (Log Pow)	0.96 Source: ICSC
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### benzyl benzoate (120-51-4)

BCF - Fish [1]	193.4 l/kg (BCFBAF v3.01, Pisces, Calculated value)
Partition coefficient n-octanol/water (Log Pow)	3.97 (Experimental value, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

### alpha-Methylbenzyl acetate (93-92-5)

Partition coefficient n-octanol/water (Log Pow)	2.5 Source: Quantitative Structure Activity Relation
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<b>Methyl atrarate (4707-47-5)</b>	
Partition coefficient n-octanol/water (Log Pow)	3.22 Source: Ecological Structure Activity Relationships
<b>CAMPHOR GUM POWDER (76-22-2)</b>	
Partition coefficient n-octanol/water (Log Pow)	2.414 (Experimental value, OECD 107: Partition Coefficient (n-octanol/water): Shake Flask Method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).
<b>4-tert-butylcyclohexyl acetate (32210-23-4)</b>	
BCF - Fish [1]	234 – 334.6 l/kg (BCFBAF v3.01, QSAR, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	4.8 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).
<b>p-tert-Butyldihydrocinnamaldehyde (18127-01-0)</b>	
Partition coefficient n-octanol/water (Log Pow)	3.94 Source: EPI SUITE
<b>4-(p-Hydroxyphenyl)-2-butanone (5471-51-2)</b>	
Partition coefficient n-octanol/water (Log Pow)	0.94 Source: The Chemical Database, The Department of Chemistry at the University of Akron

### 12.4. Mobility in soil

<b>alpha-Pinene (80-56-8)</b>	
Mobility in soil	2600 Source: HSDB
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.009 – 3.853 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Low potential for mobility in soil. May be harmful to plant growth, blooming and fruit formation.
<b>2-methylundecanal (110-41-8)</b>	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.6 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value, GLP)
Ecology - soil	Low potential for mobility in soil.
<b>Decanal (112-31-2)</b>	
Surface tension	28 mN/m
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.9 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value, GLP)
Ecology - soil	Low potential for adsorption in soil.
<b>dl-Citronellol (106-22-9)</b>	
Mobility in soil	70.79 Source: Quantitative Structure Activity Relation
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.85 (log Koc, EPIWIN 2.00, Estimated value)
Ecology - soil	Highly mobile in soil.
<b>benzyl benzoate (120-51-4)</b>	
Surface tension	27 mN/m (210 °C)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.8 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value, GLP)

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benzyl benzoate (120-51-4)	
Ecology - soil	Low potential for mobility in soil.
alpha-Methylbenzyl acetate (93-92-5)	
Mobility in soil	2.242 Source: Quantitative Structure Activity Relation
Methyl atrarate (4707-47-5)	
Mobility in soil	2.974 Source: Quantitative Structure Activity Relation
CAMPHOR GUM POWDER (76-22-2)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.068 (log Koc, Experimental value)
Ecology - soil	Low potential for adsorption in soil.
4-tert-butylcyclohexyl acetate (32210-23-4)	
Surface tension	62.9 mN/m (20 °C, OECD 115: Surface Tension of Aqueous Solutions)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.51 – 3.66 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value, GLP)
Ecology - soil	Low potential for mobility in soil.
p-tert-Butyldihydrocinnamaldehyde (18127-01-0)	
Mobility in soil	750.2 Source: EPI SUITE
Isoborneol (124-76-5)	
Mobility in soil	75.77 Source: EPISUITE

### 12.5. Other adverse effects

No additional information available

## SECTION 13: Disposal considerations

### 13.1. Disposal methods

Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.

## SECTION 14: Transport information

### 14.1. UN number

DOT NA No : UN1169  
UN-No. (TDG) : Not applicable  
UN-No. (IMDG) : Not applicable  
UN-No. (IATA) : Not applicable

### 14.2. UN proper shipping name

Proper Shipping Name (DOT) : Extracts, aromatic, liquid  
Proper Shipping Name (TDG) : Not applicable  
Proper Shipping Name (IMDG) : Not applicable  
Proper Shipping Name (IATA) : Not applicable



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### 14.3. Transport hazard class(es)

#### DOT

Transport hazard class(es) (DOT) : 3  
Hazard labels (DOT) : 3



#### TDG

Transport hazard class(es) (TDG) : Not applicable

#### IMDG

Transport hazard class(es) (IMDG) : Not applicable

#### IATA

Transport hazard class(es) (IATA) : Not applicable

### 14.4. Packing group

Packing group (DOT) : III  
Packing group (TDG) : Not applicable  
Packing group (IMDG) : Not applicable  
Packing group (IATA) : Not applicable

### 14.5. Environmental hazards

Other information : No supplementary information available.

### 14.6. Special precautions for user

#### DOT

UN-No.(DOT) : UN1169  
DOT Special Provisions (49 CFR 172.102) : B1 - If the material has a flash point at or above 38 C (100 F) and below 93 C (200 F), then the bulk packaging requirements of 173.241 of this subchapter are applicable. If the material has a flash point of less than 38 C (100 F), then the bulk packaging requirements of 173.242 of this subchapter are applicable.  
IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).  
T2 - 1.5 178.274(d)(2) Normal..... 178.275(d)(3)  
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling =  $97 / (1 + a (tr - tf))$  Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.  
DOT Packaging Exceptions (49 CFR 173.xxx) : 150  
DOT Packaging Non Bulk (49 CFR 173.xxx) : 203  
DOT Packaging Bulk (49 CFR 173.xxx) : 242  
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27) : 60 L  
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L  
DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

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### TDG

Emergency Response Guide (ERG) Number : 127

### IMDG

No data available

### IATA

No data available

## 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. US Federal regulations

All components of this product are present and listed as Active on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory, except for:

Cedarwood oil, Texas	CAS-No. 68990-83-0	1-5%
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### 15.2. International regulations

#### CANADA

#### alpha-Pinene (80-56-8)

Listed on the Canadian DSL (Domestic Substances List)

#### Thymol (89-83-8)

Listed on the Canadian DSL (Domestic Substances List)

#### cis-3-Hexenol (928-96-1)

Listed on the Canadian DSL (Domestic Substances List)

#### 2-methylundecanal (110-41-8)

Listed on the Canadian DSL (Domestic Substances List)

#### Decanal (112-31-2)

Listed on the Canadian DSL (Domestic Substances List)

#### Cedarwood oil, Texas (68990-83-0)

Not listed on the Canadian DSL (Domestic Substances List)/NDSL (Non-Domestic Substances List)

#### dI-Citronellol (106-22-9)

Listed on the Canadian DSL (Domestic Substances List)

#### Diethyl malonate (105-53-3)

Listed on the Canadian DSL (Domestic Substances List)

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### benzyl benzoate (120-51-4)

Listed on the Canadian DSL (Domestic Substances List)

### alpha-Methylbenzyl acetate (93-92-5)

Listed on the Canadian DSL (Domestic Substances List)

### Ethyl maltol (4940-11-8)

Listed on the Canadian DSL (Domestic Substances List)

### Methyl atrarate (4707-47-5)

Listed on the Canadian DSL (Domestic Substances List)

### Camphene (79-92-5)

Listed on the Canadian DSL (Domestic Substances List)

### Lauric aldehyde (112-54-9)

Listed on the Canadian DSL (Domestic Substances List)

### CAMPHOR GUM POWDER (76-22-2)

Listed on the Canadian DSL (Domestic Substances List)

### 4-tert-butylcyclohexyl acetate (32210-23-4)

Listed on the Canadian DSL (Domestic Substances List)

### p-tert-Butyldihydrocinnamaldehyde (18127-01-0)

Listed on the Canadian DSL (Domestic Substances List)

### 4-(p-Hydroxyphenyl)-2-butanone (5471-51-2)

Listed on the Canadian DSL (Domestic Substances List)

### Isoborneol (124-76-5)

Listed on the Canadian DSL (Domestic Substances List)

### Cedrol methyl ether (19870-74-7)

Listed on the Canadian DSL (Domestic Substances List)

### EU-Regulations

No additional information available

### National regulations

No additional information available

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

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### SECTION 16: Other information

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#### Full text of H-statements

H226	Flammable liquid and vapour.
H227	Combustible liquid
H228	Flammable solid.
H300	Fatal if swallowed.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.

Safety Data Sheet (SDS), USA

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.