



OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Issue date: 07/15/2024

Version: 1.0

SECTION 1: Identification

1.1. Identification

Product form : Mixture
Product name : OIL, FROSTY PINES*
CAS-No. : N/A
Product code : 11-0000-16

1.2. Recommended use and restrictions on use

1.3. Supplier

The Lebermuth Company
4004 Technology Drive
South Bend, IN 46628 - United States
T 574-259-7000 - F 574-258-7450
info@lebermuth.com - www.lebermuth.com

1.4. Emergency telephone number

Emergency number : CHEMTREC - USA: 800-424-9300 International: +1 703-527-3887 / 1-800-424-9300
CCN 13010

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 4	Combustible liquid
Skin corrosion/irritation Category 2	Causes skin irritation
Serious eye damage/eye irritation Category 2	Causes serious eye irritation
Skin sensitization, Category 1	May cause an allergic skin reaction
Carcinogenicity Category 2	Suspected of causing cancer
Specific target organ toxicity (repeated exposure) Category 2	May cause damage to organs through prolonged or repeated exposure

2.2. GHS Label elements, including precautionary statements

GHS US labeling

Hazard pictograms (GHS US) :



GHS07

GHS08

Signal word (GHS US) :

Warning

Hazard statements (GHS US) :

Combustible liquid
Causes skin irritation
May cause an allergic skin reaction
Causes serious eye irritation
Suspected of causing cancer
May cause damage to organs through prolonged or repeated exposure

Precautionary statements (GHS US) :

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Do not breathe dust/fume/gas/mist/vapors/spray.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Wash hands, forearms and face thoroughly after handling.
Contaminated work clothing must not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
If on skin: Wash with plenty of water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If exposed or concerned: Get medical advice/attention.

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Get medical advice/attention if you feel unwell.
Specific treatment (see supplemental first aid instruction on this label).
If skin irritation occurs: Get medical advice/attention.
If skin irritation or rash occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.
Wash contaminated clothing before reuse.
In case of fire: Use media other than water to extinguish.
Store in a well-ventilated place. Keep cool.
Store locked up.
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

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Name	Product identifier	%	GHS US classification
DIHYDROMYRCENOL	(CAS-No.) 18479-58-8	10 – 25	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 STOT SE 3, H336
ALPHA-TERPINEOL	(CAS-No.) 98-55-5	5 – 10	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319
EUCALYPTOL	(CAS-No.) 470-82-6	5 – 10	Flam. Liq. 3, H226 Eye Irrit. 2B, H320 Skin Sens. 1B, H317
HEXYL SALICYLATE	(CAS-No.) 6259-76-3	5 – 10	Skin Sens. 1B, H317
MENTHOL	(CAS-No.) 2216-51-5	1 – 5	Skin Irrit. 2, H315 Eye Irrit. 2B, H320
LINALOOL	(CAS-No.) 78-70-6	1 – 5	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1B, H317
LINALYL ACETATE	(CAS-No.) 115-95-7	1 – 5	Flam. Liq. 4, H227 Skin Irrit. 2, H315 Eye Irrit. 2B, H320 Skin Sens. 1B, H317
ALPHA HEXYLCINNAMALDEHYDE	(CAS-No.) 101-86-0	1 – 5	Skin Sens. 1B, H317
L-MENTHONE	(CAS-No.) 14073-97-3	1 – 5	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Skin Sens. 1B, H317
PHENYLETHYL ALCOHOL	(CAS-No.) 60-12-8	1 – 5	Acute Tox. 4 (Oral), H302 Eye Irrit. 2A, H319
GERANYL ACETATE	(CAS-No.) 105-87-3	1 – 5	Skin Irrit. 2, H315 Skin Sens. 1B, H317
DL-CITRONELLOL	(CAS-No.) 106-22-9	1 – 5	Skin Irrit. 2, H315 Eye Irrit. 2A, H319 Skin Sens. 1B, H317
ISOMENTHONE	(CAS-No.) 491-07-6	1 – 5	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Skin Sens. 1B, H317
METHYL GAMMA-IONONE	(CAS-No.) 127-51-5	1 – 5	Skin Sens. 1B, H317 STOT RE 2, H373
ETHYL MALTOL	(CAS-No.) 4940-11-8	1 – 5	Acute Tox. 4 (Oral), H302
7-acetyl-1,1,3,4,4,6-hexamethyltetralin	(CAS-No.) 1506-02-1	1 – 5	Acute Tox. 4 (Oral), H302
PULEGONE	(CAS-No.) 89-82-7	0.1 – 1	Flam. Liq. 4, H227 Acute Tox. 4 (Oral), H302 Carc. 2, H351
DELTA-3-CARENE	(CAS-No.) 13466-78-9	0.1 – 1	Flam. Liq. 3, H226 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Skin Sens. 1, H317 Asp. Tox. 1, H304

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 general : IF exposed or concerned: Get medical advice/attention.
- First-aid measures after inhalation : Remove person to fresh air and keep comfortable for breathing.
- First-aid measures after skin contact : Wash skin with plenty of water. Take off contaminated clothing. If skin irritation or rash occurs: Get medical advice/attention.
- First-aid measures after eye contact : Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
- First-aid measures after ingestion : Call a poison center/doctor/physician if you feel unwell.

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

- Symptoms/effects after inhalation : Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
- Symptoms/effects after skin contact : Irritation. May cause an allergic skin reaction.
- Symptoms/effects after eye contact : Eye irritation.

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Symptoms/effects after ingestion : None under normal conditions.

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.
Unsuitable extinguishing media : Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard : Combustible liquid.
Explosion hazard : No direct explosion hazard.
Reactivity : The product is non-reactive under normal conditions of use, storage and transport.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
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

General measures : Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.

6.1.1. For non-emergency personnel

Protective equipment : Wear recommended personal protective equipment.
Emergency procedures : Ventilate spillage area. No open flames, no sparks, and no smoking. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.

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".
Emergency procedures : Evacuate unnecessary personnel. Stop leak if safe to do so.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

For containment : Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.
Methods for cleaning up : Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
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

Additional hazards when processed : Not expected to present a significant hazard under anticipated conditions of normal use.
Precautions for safe handling : Ensure good ventilation of the work station. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Wear personal protective equipment. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust/fume/gas/mist/vapors/spray. Avoid contact with skin and eyes.
Hygiene measures : Wash contaminated clothing before reuse. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

Technical measures : Keep in a cool, well-ventilated place away from heat.
Storage conditions : Store in a well-ventilated place. Keep cool. Store locked up.
Packaging materials : Store always product in container of same material as original container.

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

OIL, FROSTY PINES* (N/A)
No additional information available
MENTHOL (2216-51-5)
No additional information available
DELTA-3-CARENE (13466-78-9)
No additional information available
ISOMENTHONE (491-07-6)
No additional information available
L-MENTHONE (14073-97-3)
No additional information available
PULEGONE (89-82-7)
No additional information available
EUCALYPTOL (470-82-6)
No additional information available
PHENYLETHYL ALCOHOL (60-12-8)
No additional information available
METHYL GAMMA-IONONE (127-51-5)
No additional information available
LINALYL ACETATE (115-95-7)
No additional information available
LINALOOL (78-70-6)
No additional information available
HEXYL SALICYLATE (6259-76-3)
No additional information available
GERANYL ACETATE (105-87-3)
No additional information available
DIHYDROMYRCENOL (18479-58-8)
No additional information available
DL-CITRONELLOL (106-22-9)
No additional information available
ALPHA-TERPINEOL (98-55-5)
No additional information available
ALPHA HEXYLCINNAMALDEHYDE (101-86-0)
No additional information available
ETHYL MALTOL (4940-11-8)
No additional information available
7-acetyl-1,1,3,4,4,6-hexamethyltetralin (1506-02-1)
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

Personal protective equipment:

Wear recommended personal protective equipment.

Hand protection:

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Color	: COLORLESS TO YELLOW
Odor	: CHARACTERISTIC, MATCHING RETAINER SAMPLE
Odor threshold	: No data available
pH	: No data available
Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: 79 °C
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability	: Not applicable.
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: 0.932 (0.922 – 0.942)
Solubility	: Insoluble.
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
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available

9.2. Other information

Refractive index : 1.469 (1.459 – 1.479)

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.

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

10.4. Conditions to avoid

Avoid contact with hot surfaces. Heat. No flames, no sparks. Eliminate all sources of ignition.

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) : Not classified
Acute toxicity (dermal) : Not classified
Acute toxicity (inhalation) : Not classified

MENTHOL (2216-51-5)	
ATE US (oral)	2500 mg/kg body weight
ATE US (dust, mist)	5.3 mg/l/4h
DELTA-3-CARENE (13466-78-9)	
ATE US (oral)	4800 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h
ISOMENTHONE (491-07-6)	
ATE US (oral)	1690 mg/kg body weight
ATE US (gases)	4500 ppmV/4h
ATE US (vapors)	11 mg/l/4h
ATE US (dust, mist)	1.5 mg/l/4h
L-MENTHONE (14073-97-3)	
ATE US (oral)	500 mg/kg body weight
PULEGONE (89-82-7)	
ATE US (oral)	470 mg/kg body weight
ATE US (dermal)	3090 mg/kg body weight
EUCALYPTOL (470-82-6)	
LD50 oral rat	4500 mg/kg body weight (OECD 401: Acute Oral Toxicity, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rat	> 2000 mg/kg body weight (OECD 402: Acute Dermal Toxicity, 24 h, Rat, Male / female, Experimental value, Dermal, 15 day(s))
ATE US (oral)	2480 mg/kg body weight
PHENYLETHYL ALCOHOL (60-12-8)	
LD50 oral rat	1603 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 dermal rabbit	2535 mg/kg body weight (Equivalent or similar to OECD 402, 24 h, Rabbit, Male / female, Experimental value, Dermal, 14 day(s))
LC50 Inhalation - Rat	> 4.63 mg/l (4 h, Rat, Male / female, Experimental value, Inhalation (aerosol), 14 day(s))
ATE US (oral)	500 mg/kg body weight
METHYL GAMMA-IONONE (127-51-5)	
LD50 oral rat	> 2000 mg/kg body weight Animal: rat, Animal sex: female, Guideline: OECD Guideline 423 (Acute Oral toxicity - Acute Toxic Class Method), Remarks on results: other:
LD50 dermal rat	> 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Remarks on results: other:
LINALOOL (78-70-6)	
ATE US (oral)	2790 mg/kg body weight
GERANYL ACETATE (105-87-3)	
LD50 oral rat	6300 mg/kg (Rat, Oral)
ATE US (oral)	6300 mg/kg body weight

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DIHYDROMYRCENOL (18479-58-8)	
ATE US (oral)	3020 mg/kg body weight
DL-CITRONELLOL (106-22-9)	
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 body weight
ATE US (dermal)	2650 mg/kg body weight
ALPHA-TERPINEOL (98-55-5)	
LD50 oral rat	4300 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 401 (Acute Oral Toxicity), 95% CL: 2900 - 5700
LD50 dermal rat	> 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity)
ATE US (oral)	4300 mg/kg body weight
ALPHA HEXYLCINNAMALDEHYDE (101-86-0)	
ATE US (oral)	3100 mg/kg body weight
ETHYL MALTOL (4940-11-8)	
LD50 oral rat	1220 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Experimental value, Oral)
LD50 dermal rabbit	> 5000 mg/kg body weight Animal: rabbit, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Remarks on results: no indication of skin irritation up to the relevant limit dose level
ATE US (oral)	1200 mg/kg body weight
7-acetyl-1,1,3,4,4,6-hexamethyltetralin (1506-02-1)	
ATE US (oral)	1000 mg/kg body weight
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye irritation.
Respiratory or skin sensitization	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Suspected of causing cancer.
PULEGONE (89-82-7)	
IARC group	2B - Possibly carcinogenic to humans
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
DIHYDROMYRCENOL (18479-58-8)	
STOT-single exposure	May cause drowsiness or dizziness.
STOT-repeated exposure	: May cause damage to organs through prolonged or repeated exposure.
EUCALYPTOL (470-82-6)	
NOAEL (oral,rat,90 days)	600 mg/kg body weight Animal: rat, Animal sex: female, Guideline: other., Guideline: OECD Guideline 407 (Repeated Dose 28-Day Oral Toxicity Study in Rodents), Guideline: EPA OPPTS 870.3150 (90-Day Oral Toxicity in Non-rodents)
METHYL GAMMA-IONONE (127-51-5)	
NOAEL (oral,rat,90 days)	30 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

METHYL GAMMA-IONONE (127-51-5)	
NOAEL (dermal, rat/rabbit, 90 days)	50 mg/kg body weight Animal: rat, Guideline: other., Remarks on results: other:
STOT-repeated exposure	May cause damage to organs through prolonged or repeated exposure.

GERANYL ACETATE (105-87-3)	
NOAEL (oral, rat, 90 days)	2000 mg/kg body weight Animal: rat, Guideline: other:

ALPHA-TERPINEOL (98-55-5)	
NOAEL (oral, rat, 90 days)	≥ 314 mg/kg body weight Animal: rat, Guideline: OECD Guideline 408 (Repeated Dose 90-Day Oral Toxicity Study in Rodents)

ETHYL MALTOL (4940-11-8)	
NOAEL (oral, rat, 90 days)	≥ 200 mg/kg body weight Animal: rat, Guideline: OECD Guideline 453 (Combined Chronic Toxicity / Carcinogenicity Studies)

Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Symptoms/effects after inhalation	: Although no appropriate human or animal health effects data are known to exist, this material is expected to be an inhalation hazard.
Symptoms/effects after skin contact	: Irritation. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Eye irritation.
Symptoms/effects after ingestion	: None under normal conditions.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
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EUCALYPTOL (470-82-6)	
LC50 - Fish [1]	57 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, <i>Oncorhynchus mykiss</i> , Semi-static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	> 100 mg/l (OECD 202: <i>Daphnia</i> sp. Acute Immobilisation Test, 48 h, <i>Daphnia magna</i> , Static system, Fresh water, Experimental value, Locomotor effect)
ErC50 algae	> 100 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, <i>Pseudokirchneriella subcapitata</i> , Static system, Fresh water, Experimental value, Nominal concentration)

PHENYLETHYL ALCOHOL (60-12-8)	
LC50 - Fish [1]	215 – 464 mg/l (DIN 38412: German standard methods for the examination of water, waste water and sludge, 96 h, <i>Leuciscus idus</i> , Static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	287.17 mg/l (EU Method C.2, 48 h, <i>Daphnia magna</i> , Static system, Fresh water, Experimental value, Locomotor effect)
ErC50 algae	1300 mg/l (DIN 38412: German standard methods for the examination of water, waste water and sludge, 72 h, <i>Desmodesmus subspicatus</i> , Static system, Fresh water, Experimental value, Nominal concentration)

METHYL GAMMA-IONONE (127-51-5)	
LC50 - Fish [1]	10.9 mg/l Test organisms (species): <i>Oncorhynchus mykiss</i> (previous name: <i>Salmo gairdneri</i>)
EC50 - Crustacea [1]	9 mg/l Test organisms (species): <i>Daphnia magna</i>

GERANYL ACETATE (105-87-3)	
LC50 - Fish [1]	68.12 mg/l (DIN 38412: German standard methods for the examination of water, waste water and sludge, 96 h, <i>Leuciscus idus</i> , Static system, Fresh water, Read-across)
EC50 - Crustacea [1]	14.1 mg/l (EU Method C.2, 48 h, <i>Daphnia magna</i> , Static system, Fresh water, Experimental value, GLP)

DL-CITRONELLOL (106-22-9)	
LC50 - Fish [1]	14.66 mg/l (DIN 38412-15, 96 h, <i>Leuciscus idus</i> , Static system, Fresh water, Experimental value)
EC50 - Crustacea [1]	17.48 mg/l (48 h, <i>Daphnia magna</i> , Static system, Fresh water, Experimental value)

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

ALPHA-TERPINEOL (98-55-5)	
LC50 - Fish [1]	70 mg/l Test organisms (species): Danio rerio (previous name: Brachydanio rerio)
EC50 - Crustacea [1]	73 mg/l Test organisms (species): Daphnia magna

ETHYL MALTOL (4940-11-8)	
LC50 - Fish [1]	> 85 mg/l (OECD 203: Fish, Acute Toxicity Test, 96 h, Oncorhynchus mykiss, Semi-static system, Fresh water, Experimental value)
EC50 - Crustacea [1]	27 mg/l (OECD 202: Daphnia sp. Acute Immobilisation Test, 48 h, Daphnia magna, Static system, Fresh water, Experimental value)
ErC50 algae	7.2 mg/l (OECD 201: Alga, Growth Inhibition Test, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, GLP)

12.2. Persistence and degradability

EUCALYPTOL (470-82-6)	
Persistence and degradability	Readily biodegradable in water.

PHENYLETHYL ALCOHOL (60-12-8)	
Persistence and degradability	Biodegradable in the soil. Readily biodegradable in water.
Biochemical oxygen demand (BOD)	1.45 g O ₂ /g substance
Chemical oxygen demand (COD)	2.5 g O ₂ /g substance
ThOD	2.6 g O ₂ /g substance

GERANYL ACETATE (105-87-3)	
Persistence and degradability	Readily biodegradable in water.
ThOD	2.6 g O ₂ /g substance

DIHYDROMYRCENOL (18479-58-8)	
Persistence and degradability	Biodegradability in water: no data available.

DL-CITRONELLOL (106-22-9)	
Persistence and degradability	Readily biodegradable in water.
Chemical oxygen demand (COD)	2.05 g O ₂ /g substance
ThOD	2.961 g O ₂ /g substance

ETHYL MALTOL (4940-11-8)	
Persistence and degradability	Readily biodegradable in water.

12.3. Bioaccumulative potential

EUCALYPTOL (470-82-6)	
BCF - Other aquatic organisms [1]	112 l/kg (Literature study, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	3.4 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

PHENYLETHYL ALCOHOL (60-12-8)	
Partition coefficient n-octanol/water (Log Pow)	1.3 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 20 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

GERANYL ACETATE (105-87-3)	
BCF - Other aquatic organisms [1]	1500 (Estimated value)
Partition coefficient n-octanol/water (Log Pow)	4.04 (Experimental value, OECD 117: Partition Coefficient (n-octanol/water), HPLC method)
Bioaccumulative potential	Potential for bioaccumulation (4 ≤ Log Kow ≤ 5).

DIHYDROMYRCENOL (18479-58-8)	
Partition coefficient n-octanol/water (Log Pow)	3.47 (Estimated value)
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)

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DL-CITRONELLOL (106-22-9)	
Bioaccumulative potential	Low potential for bioaccumulation (BCF < 500).

ETHYL MALTOL (4940-11-8)	
Partition coefficient n-octanol/water (Log Pow)	2.9 (Practical experience/observation, OECD 117: Partition Coefficient (n-octanol/water), HPLC method, 25 °C)
Bioaccumulative potential	Low potential for bioaccumulation (Log Kow < 4).

12.4. Mobility in soil

EUCALYPTOL (470-82-6)	
Surface tension	61.5 mN/m (20 °C, 1 g/l, EU Method A.5: Surface tension)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	2.33 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value)
Ecology - soil	Low potential for adsorption in soil.

PHENYLETHYL ALCOHOL (60-12-8)	
Surface tension	59.7 mN/m (20 °C, 1 g/l, OECD 115: Surface Tension of Aqueous Solutions)
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.5 (log Koc, OECD 121: Estimation of the Adsorption Coefficient (Koc) on Soil and on Sewage Sludge using High Performance Liquid Chromatography (HPLC), Experimental value)
Ecology - soil	Highly mobile in soil.

GERANYL ACETATE (105-87-3)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	3.06 (log Koc, SRC PCKOCWIN v2.0, Calculated value)
Ecology - soil	Low potential for mobility in soil.

DIHYDROMYRCENOL (18479-58-8)	
Ecology - soil	No (test)data on mobility of the substance available.

DL-CITRONELLOL (106-22-9)	
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	1.85 (log Koc, EPIWIN 2.00, Estimated value)
Ecology - soil	Highly mobile in soil.

ETHYL MALTOL (4940-11-8)	
Ecology - soil	No (test)data on mobility of the substance available.

12.5. Other adverse effects

No additional information available

SECTION 13: Disposal considerations

13.1. Disposal methods

Regional waste regulation	: Disposal must be done according to official regulations.
Waste treatment methods	: Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations	: Disposal must be done according to official regulations.
Product/Packaging disposal recommendations	: Disposal must be done according to official regulations.
Additional information	: Do not re-use empty containers.

SECTION 14: Transport information

Department of Transportation (DOT)

In accordance with DOT	
Transport document description (DOT)	: UN1266 Perfumery products (Regulated for Bulk only), Comb Liq, III
UN-No.(DOT)	: UN1266
Proper Shipping Name (DOT)	: Perfumery products (Regulated for Bulk only)
Class (DOT)	: Comb Liq - Combustible liquid
Packing group (DOT)	: III - Minor Danger

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DOT Packaging Non Bulk (49 CFR 173.xxx)	: 203
DOT Packaging Bulk (49 CFR 173.xxx)	: 242
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 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.
Emergency Response Guide (ERG) Number	: 127
Other information	: No supplementary information available.

Transportation of Dangerous Goods

Not regulated

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Transport by sea

Not regulated

Air transport

Not regulated

SECTION 15: Regulatory information

15.1. US Federal regulations

ALPHA HEXYLCINNAMALDEHYDE (101-86-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

7-acetyl-1,1,3,4,4,6-hexamethyltetralin (1506-02-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. International regulations

CANADA

MENTHOL (2216-51-5)

Listed on the Canadian DSL (Domestic Substances List)

DELTA-3-CARENE (13466-78-9)

Listed on the Canadian DSL (Domestic Substances List)

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

ISOMENTHONE (491-07-6)

Listed on the Canadian DSL (Domestic Substances List)

L-MENTHONE (14073-97-3)

Listed on the Canadian DSL (Domestic Substances List)

PULEGONE (89-82-7)

Listed on the Canadian DSL (Domestic Substances List)

EUCALYPTOL (470-82-6)

Listed on the Canadian DSL (Domestic Substances List)

PHENYLETHYL ALCOHOL (60-12-8)

Listed on the Canadian DSL (Domestic Substances List)

METHYL GAMMA-IONONE (127-51-5)

Listed on the Canadian DSL (Domestic Substances List)

LINALYL ACETATE (115-95-7)

Listed on the Canadian DSL (Domestic Substances List)

LINALOOL (78-70-6)

Listed on the Canadian DSL (Domestic Substances List)

HEXYL SALICYLATE (6259-76-3)

Listed on the Canadian DSL (Domestic Substances List)

GERANYL ACETATE (105-87-3)

Listed on the Canadian DSL (Domestic Substances List)

DIHYDROMYRCENOL (18479-58-8)

Listed on the Canadian DSL (Domestic Substances List)

DL-CITRONELLOL (106-22-9)

Listed on the Canadian DSL (Domestic Substances List)

ALPHA-TERPINEOL (98-55-5)

Listed on the Canadian DSL (Domestic Substances List)

ALPHA HEXYLCINNAMALDEHYDE (101-86-0)

Listed on the Canadian DSL (Domestic Substances List)

ETHYL MALTOL (4940-11-8)

Listed on the Canadian DSL (Domestic Substances List)

7-acetyl-1,1,3,4,4,6-hexamethyltetralin (1506-02-1)

Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

No additional information available

National regulations

MENTHOL (2216-51-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

DELTA-3-CARENE (13466-78-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

ISOMENTHONE (491-07-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

L-MENTHONE (14073-97-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

PULEGONE (89-82-7)

Listed on IARC (International Agency for Research on Cancer)
Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

EUCALYPTOL (470-82-6)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

PHENYLETHYL ALCOHOL (60-12-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

METHYL GAMMA-IONONE (127-51-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

LINALYL ACETATE (115-95-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

LINALOOL (78-70-6)

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DIHYDROMYRCENOL (18479-58-8)

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Listed on INSQ (Mexican National Inventory of Chemical Substances)

ALPHA-TERPINEOL (98-55-5)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

ETHYL MALTOL (4940-11-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active
Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

 **WARNING:**

This product can expose you to beta-myrcene, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

This product can expose you to pulegone, which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

SECTION 16: Other information

OIL, FROSTY PINES*

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Full text of H-phrases:

H226	Flammable liquid and vapor
H227	Combustible liquid
H302	Harmful if swallowed
H304	May be fatal if swallowed and enters airways
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H319	Causes serious eye irritation
H320	Causes eye irritation
H332	Harmful if inhaled
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer
H373	May cause damage to organs through prolonged or repeated exposure

SDS US (GHS HazCom 2012) - Lebermuth

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.