

SAFETY DATA SHEET

DENBRE

Date Revised: August 2025
Supersedes: August 2020

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : DENBRE
Product Number : N/A
Product Form : Pure Pheromone for Western Pine Beetle *Dentroctonus brevicomis*
Brand : Alpha Scents

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

Identified uses : Insect Lure in a plastic bulb

1.3 Details of the supplier of the safety data sheet

Company : Alpha Scents, Inc.
360 S. Sequoia Pkwy.
CANBY OR 97013
USA
Telephone : 503-342-8611
Fax : 314-271-7297

1.4 Emergency telephone number

Emergency Phone # : 800-222-1222

2. HAZARDS IDENTIFICATION

2.1 Physical hazards

Not classified

2.2. Health hazards

Not classified

2.3 Environmental hazards

Not classified

2.4 OSHA defined hazards

Not classified

2.5 Label elements

Hazard symbol

None.

Signal word

None.

Hazard Statements

The substance does not meet the criteria for classification.

Precautionary statement

Prevention

Observe good industrial hygiene practices.

Response

Wash hands after handling.

Storage

Store away from incompatible materials.

Disposal

Dispose of waste and residues in accordance with local authority requirements

2.6 Hazards not otherwise classified (HNOC) or not covered by GHS

None known.

2.7 Supplemental information

None.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

(1)	Chemical Name	:	exo-7-Ethyl-5-methyl-6,8-dioxabicyclo[3.2.1]octane
	Synonyms	:	exo-brevicommin
	Formula	:	C ₉ H ₁₆ O ₂
	Molecular weight	:	156.22
	CAS-No.	:	60018-04-4
	EC Number	:	
(2)	Chemical Name	:	1,5-Dimethyl-6,8-dioxabicyclo[3.2.1]octane
	Synonyms	:	frontalin
	Formula	:	C ₈ H ₁₄ O ₂
	Molecular weight	:	142.2
	CAS-No.	:	60478-96-8
	EC Number	:	
(3)	Chemical Name	:	7-Methyl-3-methylene-1,6-octadiene
	Synonyms	:	myrcene
	Formula	:	C ₁₀ H ₁₆
	Molecular weight	:	136.23
	CAS-No.	:	123-35-3
	EC Number	:	204-622-5

The exact percentage of composition has been withheld as a trade secret.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Get medical attention if irritation develops and persists

In case of eye contact

Flush eyes with water. Get medical attention if irritation develops and persists.

If swallowed

Rinse mouth with water. Consult a physician if symptoms occur.

4.2 Most important symptoms and effects, both acute and delayed

Direct contact with eyes may cause temporary irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically

4.4. General information

Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray/fog, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

5.2 Special hazards arising from the substance or mixture

During fire, gases hazardous to health may be formed

5.3 Advice for firefighters

Wear self-contained breathing apparatus and full protective clothing for firefighting. Move containers from fire area if you can do so without risk. Use standard firefighting procedures and consider the hazards of other involved materials

5.4 Further information

No unusual fire or explosion hazards noted.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. For personal protection, see section 8.

6.2 Environmental precautions

Do not let product enter drains, water courses, or spill onto the ground.

6.3 Methods and materials for containment and cleaning up

Large spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.

Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.

Never return spills to original containers for re-use.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Observe good industrial hygiene practices

7.2 Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store away from incompatible materials (see section 10 of the SDS). Store tightly under inert gas below 0° C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Occupational exposure limits

No exposure limits noted for ingredient(s)

8.2 Exposure controls

Biological limit values

No biological exposure limits noted for the ingredient(s)

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Personal protective equipment

Eye/face protection

Wear safety glasses with side shields (or goggles)

Skin protection

Hand protection

Wear appropriate chemical resistance gloves. Suitable gloves can be recommended by the glove supplier.

Other

Wear suitable protective clothing

Respiratory protection

In case of insufficient ventilation, wear suitable respiratory equipment.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary

Control of environmental exposure

Do not let product enter drains.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

1. **exo-7-Ethyl-5-methyl-6,8-dioxabicyclo[3.2.1]octane**

a) Appearance	Form: No data available Color: No data available
b) Odor	No data available
c) Odor threshold	No data available
d) pH	No data available
e) Melting point/freezing	No data available
f) Initial boiling point and boiling range	No data available
g) Flash point	No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	No data available
l) Vapor density	No data available
m) Relative density	No data available
n) Water solubility	No data available
o) Partition coefficient n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

2. **1,5-Dimethyl-6,8-dioxabicyclo[3.2.1]octane**

a) Appearance	Form: liquid, clear Color: colorless
b) Odor	Characteristic
c) Odor threshold	No data available
d) pH	No data available
e) Melting point/freezing	No data available.
f) Initial boiling point and boiling range	58-60°C @ 20 mm Hg boiling range
g) Flash point	No data available
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	No data available
l) Vapor density	No data available
m) Relative density	No data available
n) Water solubility	No data available
o) Partition coefficient n-octanol/water	No data available
p) Auto-ignition temperature	No data available
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

3. **7-Methyl-3-methylene-1,6-octadiene**

a) Appearance	Form: liquid, clear Color: colorless
b) Odor	No data available
c) Odor threshold	No data available
d) pH	No data available
e) Melting point/freezing	< -80 °C (< -112 °F) at 1,013 hPa (760 mmHg)
f) Initial boiling point and boiling range	167 °C (333 °F) - lit.
g) Flash point	44 °C (111 °F) - closed cup

h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	No data available
k) Vapor pressure	9 hPa (7 mmHg) at 20 °C (68 °F)
l) Vapor density	4.7 - (Air = 1.0)
m) Relative density	0.791 g/mL at 25 °C (77 °F)
n) Water solubility	0.00109 g/l at 20 °C (68 °F)
o) Partition coefficient n-octanol/water	log Pow: 5.285 at 25 °C (77 °F)
p) Auto-ignition temperature	255 °C (491 °F)
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

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

10.2 Chemical stability

Material is stable under normal conditions.

10.3 Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use

10.4 Conditions to avoid

Contact with incompatible materials

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

CO, CO₂, Smoke

11. TOXICOLOGICAL INFORMATION

11.1 Information on likely routes of exposure

11.2 Skin contact

No adverse effects due to skin contact are expected

11.3 Eye contact

Direct contact with eyes may cause temporary irritation.

11.4 Ingestion

Expected to be a low ingestion hazard

11.5 Inhalation

No adverse effects due to inhalation are expected

Symptoms related to the physical chemical and toxicological characteristics

Direct contact with eyes may cause temporary irritation

11.6 Information on toxicological effects

11.7 Acute toxicity

Not available

11.8 Skin corrosion/irritation

Prolonged skin contact may cause temporary irritation

11.9 Serious eye damage/eye irritation

Direct contact with eyes may cause temporary irritation

11.10 Respiratory or skin sensitization

Respiratory sensitization

Not a respiratory sensitizer

Skin sensitization

This product is not expected to cause skin sensitization

11.11 Germ cell mutagenicity

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic

11.12 Carcinogenicity

This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed

11.13 Reproductive toxicity

This product is not expected to cause reproductive or developmental effects.

11.14 Specific target organ toxicity -single exposure

Not classified

11.15 Specific target organ toxicity -repeated exposure

Not classified

11.16 Aspiration hazard

Not an aspiration hazard.

12. ECOLOGICAL INFORMATION

12.1 Ecotoxicity

This product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have harmful or damaging effects on the environment

12.2 Persistence and degradability

No data is available on the degradability of this product.

12.3 Bioaccumulative potential

Partition coefficient n-octanol:water (log K_{ow})

6.28, US EPA. 2014.

12.4 Mobility in soil

No data available

12.5 Other adverse effects

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. DISPOSAL CONSIDERATIONS

13.1 Disposal instructions

Collect and reclaim or dispose in sealed containers at licensed waste disposal site

13.2 Local disposal regulations

Dispose in accordance with all applicable regulations

13.3 Hazardous waste code

The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

13.4 Waste from residues / unused products

Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions)

13.5 Contaminated packaging

Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. TRANSPORT INFORMATION

14.1 DOT (US)

Not regulated as dangerous goods

14.2 IMDG

Not regulated as dangerous goods

14.3 IATA

Not regulated as dangerous goods

14.4 Transport in bulk according to Annex II or MARPOL 73/78 and the IBC Code

Not established

15. REGULATORY INFORMATION

15.1 US Federal Regulations

One or more components are not listed on TSCA. This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

SARA 304 Emergent release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

15.2 Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard – No

Delayed Hazard – No

Fire Hazard – No

Pressure Hazard – No

Reactivity Hazard – No

SARA 302 Extremely hazardous substance

Not listed

SARA 311/312 Hazardous chemical

No

SARA 313 (TRI reporting)

Not regulated.

15.3 Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated

Clean Air Act (CAA) Section 112® Accidental Release Prevention (40 CFR 68.130)

Not regulated

Safe Drinking Water Act (SDWA)

Not regulated

15.4 US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100_

Not listed

US. Massachusetts RTK – Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Act

Not listed.

US. Rhode Island RTK

Not regulated.

US. California proposition 65

California Safe Drinking Water and Toxic Environment Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

15.5 International Inventories

Country(s) or Region	Inventory name	On inventory (Yes/No)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
China	Inventory of Existing Chemical Substances in China (IECSC).	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European list of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemical List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippines Inventory of Chemicals and Chemical Substances (PICCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s). A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. OTHER INFORMATION

Issue Date 08-28-2020

Further information

Copyright 2020 Alpha Scents, Inc. The information contained herein is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Alpha Scents, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.