

# SAFETY DATA SHEET

(According to EC Directive 2001/58/EC)

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BioSensory, Inc.  
Willimantic CT USA

## Section 1: IDENTIFICATION OF THE SUBSTANCE AND COMPANY

### 1.1. Identification of the substance or preparation

Linalool.

Synonyms: 1,6-octadien-3-ol; 3,7-dimethyl-1,6-octadien-3-ol.

### 1.2. Use of the substance/preparation

Mosquito sensory inhibitor, scent masking agent.

### 1.3. Company identification

Manufacturer - Bedoukian Research Inc., 21 Finance drive, Danbury, CT 06810-4192, USA.

Telephone:001 203 830 4000.

Formulator – BioSensory® Inc., Windham Mills Technology Center, 322 Main Street Building 1, Floor 2, Willimantic, CT 06226-3149, USA.

Telephone: 001 860 423 3028.

EU Member State address: -Information required to complete SDS.

### 1.4. Emergency telephone

+1 860 423 3009

## Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

### 2.1. Chemical characterisation

Linalool (95.54%).

MW 154.25; Molecular formula C<sub>10</sub>H<sub>18</sub>O.

Hazardous ingredients: Linalool is slightly irritating.

### 2.2.

(i) Substances presenting a health or environmental hazard: NOT APPLICABLE.

(ii) Community workplace exposure limits: NOT APPLICABLE.

### 2.3. NOT APPLICABLE.

2.4. R36/38 R50 S2 S24/S25 S46. Classification in accordance with Directive 67/548/EEC – Xi: Irritating to eyes and skin. 'N' – very toxic to aquatic organisms.

2.5. EC number: 201-134-4; CAS number: 78-70-6; CIPAC number: Not available.

2.6. Chemical nature of substances whose identity is to be kept confidential: NOT APPLICABLE.

## Section 3: HAZARDS IDENTIFICATION

Transient skin irritation.

Moderate ocular irritation.

Very toxic to aquatic organisms.

No known chronic effects based on animal studies.

Ingredient not listed as carcinogen.

After contact with eyes, rinse immediately with water and seek medical advice.

After contact with skin, wash immediately with water.

Remove all contaminated clothing.

If swallowed do not induce vomiting, seek medical advice.

Wear suitable protective clothing, gloves and eye/face protection.

In case of insufficient ventilation wear suitable respiratory equipment.

Keep replacement scent cartridges unopened in cool, dry place and, once opened, avoid contact with skin, eyes or mouth. Avoid direct inhalation of scent.

## Section 4: FIRST AID MEASURES

For skin or eye contact, immediately flush affected areas of skin thoroughly with soap and water, remove contaminated clothing/shoes/gloves while flushing. Ensure eyes are copiously rinsed with clean water for approximately 15 minutes.

If inhaled, remove to fresh air away from dispenser.

If swallowed, rinse mouth with water if victim is conscious. Do not induce vomiting. CALL PHYSICIAN.

Wash any contaminated clothing prior to re-use.

## Section 5: FIRE-FIGHTING MEASURES

Extinguish using water spray, fog or carbon dioxide to control fire.

Firefighters – wear self-contained breathing apparatus and protective clothing to prevent skin/eye contact.

No known explosion hazards.

## Section 6: ACCIDENTAL RELEASE MEASURES

### Personal precautions:

Evacuate area. Wear self-contained breathing apparatus and protective gloves, splash-proof eye-goggles.

### Environmental precautions:

Keep away from drains, surface and ground water and soil.

### Methods for cleaning up:

Wipe residual material from spillage with a cloth and place in closed container for disposal. Ventilate area and wash spill site after material spillage has been removed.

## Section 7: HANDLING AND STORAGE

### **7.1. Handling**

Avoid contact between skin, eyes or mouth. Wash hands after use and before eating, drinking, chewing gum, smoking or using bathroom facilities.

### **7.2. Storage**

Store in cool dry conditions. Store replacement scent cartridges unopened.

### **7.3. Specific use(s)**

Inhibitory scent blocker, masking normal human scent to block mosquito kairomone sensory ability.

## Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### **8.1. Exposure limit values**

No available data.

### **8.2. Exposure controls**

Observe usual hygiene precautions when handling. Use safety shower and eye bath.

#### 8.2.1. Occupational exposure controls:

Use engineering controls wherever possible, wearing protective clothing.

##### 8.2.1.1. Respiratory protection:

Use appropriate NIOSH/MSHA-approved respirator.

##### 8.2.1.2. Hand protection:

Use chemical resistant gloves.

##### 8.2.1.3. Eye protection:

Safety goggles or 8 inch minimum faceshield. Use eye bath.

##### 8.2.1.4. Skin protection:

Use safety shower.

#### 8.2.2. Environmental exposure controls

Keep away from drains, surface and ground water and soil.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. General information

*Appearance:* Linalool is a colourless or pale yellow liquid.  
*Odour:* Floral, spicy, woody odour.  
*Content:* Scent cartridge contains approximately 15g of the active ingredient, 95.54% linalool.

### 9.2. Important health, safety and environmental information

pH: 7  
Melting point: 20°C  
Boiling point: 198°C at 760 hPa  
Flash point: 76°C  
Autoflammability: 235°C  
Explosive properties: Not explosive  
Oxidising properties: Not oxidising  
Vapour pressure: 0.05027 hPa at 20°C  
Specific gravity: 0.9 g/cm<sup>3</sup>  
Solubility:  
-water solubility: Poorly soluble - 0.16 g/100 ml  
Partition coefficient (n-octanol/water):  $K_{ow} = 2.9$

### 9.3. Other information

Not applicable.

## Section 10: STABILITY AND REACTIVITY

### 10.1. Conditions to avoid

Material is stable under normal physical conditions.

### 10.2. Materials to avoid

Incompatible with oxidising materials.

### 10.3. Hazardous decomposition products

May produce oxides of carbon if heated to decomposition.

## Section 11: TOXICOLOGICAL INFORMATION

### Rat:

Oral LD<sub>50</sub> = 2440-3180 mg/kg bw.  
Inhalation LC<sub>50</sub>: No available data.

### Rabbit:

Dermal LD<sub>50</sub> = >3580 mg/kg bw.  
Skin irritation = slight irritant.  
Eye irritation = slight irritant.

### Guinea pig:

Skin sensitisation – non-sensitising in maximisation model.

### Other information:

Mutagenic potential: - *In vitro* studies negative, no *in vivo* studies conducted. Extensive human exposure through fragrances, perfumes, soaps and detergents has shown no mutagenic hazard.

### Subacute/Chronic toxicity:

NOAEL > 250 mg/kg bw/day in 90 day rat study.

### Experiences with human beings:

Accepted by Council of Europe for use in foods as an artificial flavouring – considered Generally Recognised as Safe (GRAS) by US Food and Drug Administration. Approved in Europe for use as artificial flavouring in foodstuffs with an acceptable daily intake value of 0.25 mg/kg. Linalool is also used in fragrances, detergents and soaps up to a level of 1.5%; there has been no evidence to date for ocular or respiratory effects arising from perfume evaporation, no evidence to indicate any carcinogenic hazard.

## Section 12: ECOLOGICAL INFORMATION

### 12.1. Ecotoxicity

Acute toxicity fish (trout) LC <sub>50</sub>	0.6 mg/L.
Acute toxicity invertebrate ( <i>D.pulex</i> ) EC <sub>50</sub>	42-53 mg/L.
Toxicity to aquatic plants ( <i>Chlorella pyrenoidosa</i> )	NOEC > 1000 mg/L.

Waiver requested for toxicity to microorganisms since linalool is naturally occurring and found in soil and water with no negative effects on microorganisms. Linalool volatilises from water surface with half life of 2.4 days in rivers, not persisting long enough to cause chronic effects in fish, sediment concentrations remain low so limited likelihood of effects on sediment dwellers. Linalool is naturally present in numerous terrestrial plants and there is no evidence that direct application to plants has any adverse effects.

### 12.2. Mobility

No information.

### 12.3. Persistence and degradability

Linalool is a naturally occurring alcohol, ubiquitous in plants and environment. No indications of persistence in soil.

### 12.4. Bioaccumulative potential

No data available.

### 12.5. Other adverse effects

Unknown.

### Section 13: DISPOSAL CONSIDERATIONS

The material should be discarded in accordance with local and national regulations. Incineration or disposal in local landfill are appropriate.

### Section 14: TRANSPORT INFORMATION

#### 14.1 Road transport

14.1.1 ADR:- Class 6.1 Toxic substances.

14.1.2 RID:- Class 6.1 Toxic substances.

#### 14.2 Inland waterways transport

14.2.1 ADNR:- Class 6.1 Toxic substances.

#### 14.3 Marine transport

14.3.1 IMDG/UN:- Class 6.1 Toxic substances.

#### 14.4 Air transport

14.4.1 ICAO/IATA-DGR:- Class 6.1 Toxic substances.

### Section 15: REGULATORY INFORMATION

Labelling in accordance with EC Directive 2001/59/EC:



**IRRITANT**



**DANGEROUS FOR ENVIRONMENT**

Labelling with the symbol 'Xi' and the appropriate indication of danger - R36 – Irritating to the eyes, is required.

### Section 16: OTHER INFORMATION

R36/38 – Irritating to eyes and skin.

R50 – Very toxic to aquatic organisms

S2 – Keep out of reach of children.

S24/25 – Avoid contact with skin/eyes

S46 – If swallowed, seek medical advice immediately (show label where possible)

The information presented in this data sheet is believed to be correct based on our present state of knowledge but does not purport to be all inclusive and shall be used only as a guide. It should not therefore be construed as guaranteeing specific properties of the product described or its suitability for a particular application and cannot be cited as a base for contractual agreements. BioSensory, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

The user of the product is responsible for observance of or compliance with existing laws and directives.