

SAFETY DATA SHEET

(According to EC Directive 2001/58/EC)

Ver.27-Apr-04

Safety data sheet in accordance with 2001/58/EC. Trade name: Mosquito L. Print version: 28-Apr-04

Section 1: IDENTIFICATION OF THE SUBSTANCE AND COMPANY

1.1. Identification of the substance or preparation

Mosquito L

1.2. Use of the substance/preparation

For use in biting insect inhibitory scent blocker products

1.3. Company identification

Bedoukian Research, Inc.

21 Finance Dr, Danbury, CT 06810, USA

EU Member State address:- This information is required to complete SDS.

1.4. Emergency telephone

+203 830 4000.

Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

2.1. General description:

The product is a liquid with one major component (active ingredient) and four minor ingredients.

2.2. Substances presenting a health or environmental hazard or having Community workplace exposure limits

Substance	Composition %	2.5. Identification	2.4. Classification and risk phrases attached.
Linalool	97%	MW 154.25; Molecular formula C ₁₀ H ₁₈ O. 3,7-dimethyl-1,6-octadien-3-ol (CAS) 3,7-dimethyl-octa-1,6-dien-3-ol (IUPAC). CAS 78-70-6 EC 201-134-4	Xi R36/38 R52

See Section 16 for full text of risk phrases

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

Section 3: HAZARDS IDENTIFICATION

Mosquito L according to Directive 1999/45/EC is classified as:

Irritant

And attracts the following indicators of hazard

R36/38: Irritating to eyes and skin

R52: Harmful to aquatic organisms

No known chronic effects based on animal studies.

None of the ingredients are listed as carcinogens.

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 remove to fresh air at once. If breathing is difficult, get medical attention.

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 but combustion of preparation releases oxides of carbon.

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions:

Protective gloves.

Environmental precautions:

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

Methods for cleaning up:

Wipe residual material from spillage with a cloth or scraper and place in closed container for disposal. Standard absorbents may be used. 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.

7.3. Specific use(s)

For use in formulated preparations or devices as an inhibitory scent blocker, masking normal human scent to block mosquito kairomone sensory ability.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Exposure limit values

Not established for linalool

8.2. Exposure controls

Observe usual hygiene precautions when handling.

8.2.1. Occupational exposure controls:

Use engineering controls wherever possible, wearing protective clothing.

8.2.1.1. Respiratory protection.

None

8.2.1.2. Hand protection:

Use chemical resistant gloves.

8.2.1.3. Eye protection:

Safety goggles, 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: Colourless or pale yellow liquid.

Odour: Floral, spicy odour.

9.2. Important health, safety and environmental information

pH: 7.0

Melting point: Liquid at room temperature

Boiling point: 194°C to 198°C

Flash point: 76°C

Explosive properties: Not explosive

Oxidising properties: Not oxidising

Vapour pressure (linalool): 21Pa at 25°C

Specific gravity: 0.9 g/cm³

Solubility (linalool):

Water solubility: Poorly soluble - 0.16 g/100 ml

Solvents: Miscible with ethanol and ether

Partition coefficient(linalool): $K_{ow} = 2.97$ (n-octanol/water)

9.3. Other information

Autoflammability: 235°C

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

No known hazardous materials are produced on decomposition other than combustion of preparation releases oxides of carbon.

Section 11: TOXICOLOGICAL INFORMATION

Rat:

Oral LD₅₀ = 2440-3180 mg/kg bw.

Inhalation LC₅₀: No available data.

Rabbit:

Dermal LD₅₀ = >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) LC₅₀ 13.0 mg/L.

Acute toxicity invertebrate (*Daphnia pulex*) EC₅₀ 42-53 mg/L.

Toxicity to aquatic plants (*Chlorella pyrenoidosa*) NOEC > 1,000 mg/L.

Linalool is naturally occurring and found in soil and water with no negative effects on microorganisms. Linalool volatilises from water surface with a half-life of 2.4 days in rivers, not persisting long enough to cause chronic effects in fish; sediment concentrations remain low. 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

The Koc of linalool in soil is estimated to be 75 and is expected to be highly mobile in soil.

12.3. Persistence and degradability

Linalool is a naturally occurring alcohol, ubiquitous in plants and environment. Half-life in air expected to be 3.8 hours. Linalool is not expected to adsorb strongly to sediment.

12.4. Bioaccumulative potential

Low potential to bioaccumulate.

12.5. Other adverse effects

Not known.

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 ADN:- 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

Labelling with the symbol 'Xi' and the appropriate indications of danger:

- R36/38 Irritating to eyes and skin
- R52 Harmful to aquatic organisms

- S2 Keep out of reach of children.
- S24/25 Avoid contact with skin/eyes
- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- S37 Wear suitable gloves
- S46 If swallowed, seek medical advice immediately (show label where possible)

Section 16: OTHER INFORMATION

Other risk phrases used in this document

None

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. Bedoukian Research Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

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