

Section 1. Product and Company Identification

Product Name Linalool
CAS Number 78-70-6

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CHEMTEL
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Collect Calls Accepted

Section 2. Hazards Identification

Classification of the substance or mixture

GHS Classification

Flammable liquids: Category 4
Skin irritation: Category 2
Eye irritation: Category 2A

GHS Label Elements

Pictograms:



Signal word: WARNING

Hazard and precautionary statements

Hazard Statements

H227 Combustible liquid.
H315 Causes skin irritation.
H319 Causes serious eye irritation.

Precautionary Statements

Prevention

P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/eye protection/face protection

Response

P302 + P352 IF ON SKIN: Wash with plenty of soap and 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.
P332 + P313 If skin irritation occurs: Get medical advice/attention.



P337 + P313 If eye irritation persists: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.

Potential Health Effects

Primary Routes of Entry: Skin Absorption

Skin: May cause skin irritation.

Eyes: May cause eye irritation.

Aggravated Medical Condition: None known.

Symptoms of Overexposure: Drowsiness, Disorders of the central nervous system, Respiratory disorders

Carcinogenicity

IARC: No component of this product, present at levels greater than or equal to 0.1%, is identified as probable, possible or confirmed human carcinogen by IARC.

ACGIH: No component of this product, present at levels greater than or equal to 0.1%, is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA: No component of this product, present at levels greater than or equal to 0.1%, is identified as a carcinogen or potential carcinogen by OSHA.

NTP: No component of this product, present at levels greater than or equal to 0.1%, is identified as a known or anticipated carcinogen by NTP.

Additional hazards and advice: None known.

Section 3. Composition / Information on Ingredients

Common Name Linalool
Synonym(s) 3,7-Dimethyl-1,6-octadien-3-ol; Linalyl Alcohol
Formula C₁₀H₁₈O
CAS Number 78-70-6

COMPONENT	CAS NUMBER	CONCENTRATION
Linalool	78-70-6	90 - 100%

Section 4. First Aid Measures

General advice: Move out of dangerous area. Show this safety data sheet to the doctor in attendance.

Inhalation: Move to fresh air. Consult a physician after significant exposure.

Skin Contact: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. If symptoms persist, call a physician.

Eye Contact: Immediately flush eye(s) with plenty of water. Remove contact lenses. Protect unharmed eye. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.

Ingestion: Clean mouth with water and drink afterwards plenty of water. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Obtain medical attention.

Most important symptoms and effects, both acute and delayed: Drowsiness, Disorders of the central nervous system, Respiratory disorders

Notes to physician: Treat symptomatically

Section 5. Firefighting Measures

Flammable Properties

Flash point: 171.0°F (77.2°C) at 1,013 hPa (101,300 mm/Hg)

Method: ISO 2719

Ignition temperature: 260°C (at 994 hPa, DIN 51794)

Lower explosion limit: 0.9% (V)

Upper explosion limit: 5.2% (V)

Firefighting

Suitable extinguishing media: Alcohol-resistant foam; Dry chemical; Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media: High volume water jet

Further Information: Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Protective equipment and precautions for firefighters

Specific hazards during firefighting: None known.

Special protective equipment for firefighters: In the event of fire, wear self-contained breathing apparatus

Section 6. Accidental Release Measures

Personal precautions, protective equipment, and emergency procedures: Use personal protective equipment. Ensure adequate ventilation.

Environmental precautions: Try to prevent the material from entering drains or water courses.

Methods and materials for containment and cleaning up: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

Section 7. Handling and Storage

Advice on safe handling: Provide sufficient air exchange and/or exhaust in work rooms. Avoid contact with skin and eyes. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion: Take necessary action to avoid static electricity discharge. Product will burn under fire conditions.

Conditions for safe storage: Keep under inert gas. Protect against light. Protect from humidity. Keep container tightly closed and dry.

Storage Temperature: < 77°F (< 25°C)

Section 8. Exposure Controls / Personal Protection

Components with workplace control parameters: Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection: In case of mist, spray, or aerosol exposure, wear suitable personal respiratory protection and protective suit. In the case of vapor formation use a respirator with an approved filter.

Hand protection: Glove material: for example nitrile rubber
Consider the hazard characteristics of this product and any special workplace conditions when selecting the appropriate type of protective gloves.

Eye protection: Safety glasses with side-shields

Skin and body protection: Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Section 9. Physical and Chemical Properties

Appearance: Clear liquid

Color: Colorless

Odor: Floral

Odor Threshold: No information available.

pH: 4.5 (1.45 g/l, 25°C)

Freezing point: < -74°C (OECD Test Guideline 102)

Boiling point/boiling range: 196.3°C (at 992 hPa; OECD Test Guideline 103)

Flash point: 77.2°C (1,013 hPa, ISO 2719)

Evaporation rate: Not determined

Lower explosion limit: 0.9% (V)

Upper explosion limit: 5.2% (V)

Vapor pressure: 0.273 hPa (at 25°C)

Relative vapor density: not determined

Density: 0.859 - 0.863 g/cm³ (at 20°C)
0.858 g/cm³ (at 25°C; OECD Test Guideline 109)

Water solubility: 1.47 - 1.65 g/l (25°C)

Slightly soluble

Solubility in other solvents: various organic solvents: soluble

Partition Coefficient (n-Octanol/water): log Pow 2.9 (20°C; OECD Test Guideline 107)

Auto-ignition temperature: Not pyrophoric
Ignition temperature: 260°C (at 994 hPa, DIN 51794)
Thermal decomposition: Not relevant
Viscosity, dynamic: 4.465 mPa*s (at 25°C, OECD Test Guideline 114)
Explosive properties: Not explosive
Oxidizing properties: Not oxidizing

Other Information

Refractive index: 1.460 - 1.464 (589 nm, 20°C)
Molecular weight: 154.25 g/mol
Surface tension: 8.3 mN/m (20°C)

Section 10. Stability and Reactivity

Reactivity: No hazards to be specially mentioned.
Chemical stability: Stable under recommended storage conditions.
Possibility of hazardous reactions: Decomposes on heating in the presence of air. Strongly exothermic reaction with air.
Conditions to avoid: Exposure to air. Heat.
Incompatible materials: Bases; Strong acids; Strong oxidizing agents
Hazardous decomposition products: No decomposition if used as directed.

Section 11. Toxicological Information

Acute oral toxicity

LD50 (Rat): 2,790 mg/kg
LD50 (Mouse): ca. 2,200 mg/kg

Acute inhalation toxicity

LCLo (lowest lethal concentration) (Mouse, 1 h): > 50 mg/l

Acute dermal toxicity

LD50 (Rabbit): 5,610 mg/kg
Skin irritation: Skin irritation (Rabbit, OECD Test Guideline 404)
Eye irritation: Eye irritation (Rabbit, OECD Test Guideline 405)

Sensitization

Did not cause sensitization. (human, HRIPT: Human Repeat Insult Patch Test)
Did not cause sensitization on laboratory animals. (several species, Various test systems)

Carcinogenicity: No indication for carcinogenicity known.

Genotoxicity in vitro: not mutagenic, not genotoxic (Various test systems)

Genotoxicity in vivo: not genotoxic (Mouse, Bone marrow, Mutagenicity (micronucleus test))

Reproductive toxicity: No indication for adverse effects on fertility known.
NOAEL: 365 mg/kg bw/d (Rat)

Teratogenicity: Not teratogenic. Not embryotoxic.
NOAEL: 1,000 mg/kg bw/d (Rat, Oral)

STOT - Single exposure (Acute exposure): The substance or mixture is not classified as specific target organ toxicant, single exposure.

STOT - Repeated exposure

NOAEL (Oral, Rat): 117 mg/kg bw/d

Subacute toxicity study (28 days)

(OECD Test Guideline 407)

NOAEL (Dermal, Rat): 250 mg/kg bw/d

Sub-chronic toxicity study (90-day)

Experience with human exposure: Overexposure may provoke the following symptoms:
Drowsiness, Disorders of the central nervous system, Respiratory disorders

Further information: May cause irritation of respiratory tract.

Aspiration toxicity: No aspiration toxicity classification

Section 12. Ecological Information

Toxicity

Toxicity to fish

LC50 - *Salmo gairdneri* (rainbow trout): 27.8 mg/l (96 h)

(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates

EC50 - *Daphnia magna* (Water flea): 59 mg/l(48 h)

(OECD Test Guideline 202)

Toxicity to algae

ErC50 - *Desmodesmus subspicatus* (green algae): 156.7 mg/l (96 h)

(nominal concentration) (DIN 38412)

EbC50 - *Desmodesmus subspicatus* (green algae): 88.3 mg/l (96 h)

(nominal concentration)

Toxicity to bacteria

EC50 - activated sludge: > 100 mg/l (3 h)

(OECD Test Guideline 209)

Persistence and degradability

Biodegradability: Readily biodegradable.

64.2 % (28 d)

(OECD Test Guideline 301D)

Bioaccumulative potential

Bioaccumulation: No bioaccumulation is to be expected ($\log P_{ow} \leq 4$).

Partition coefficient (n-Octanol/Water): $\log P_{ow}$ 2.9 (20°C ; OECD Test Guideline 107)



Mobility in soil

Distribution among environmental compartments: Adsorption, Soil

Koc 75 (calculated value)

Surface tension: 8.3 mN/m (20°C)

Results of PBT and vPvB assessment

Assessment: The substance does not fulfill the PBT criteria.

Assessment: The substance does not fulfill the vPvB criteria.

Other Adverse Effects

Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional Ecological Information: Harmful to aquatic organisms

Section 13. Disposal Considerations

Waste Treatment Methods: Dispose of product and contaminated packaging in accordance with all local, state, and federal environmental control regulations.

Section 14. Transport Information

International Regulation

UNRTDG: Not regulated as a dangerous good

IATA-DGR: Not regulated as a dangerous good

IMDG-Code: Not regulated as a dangerous good

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number: NA1993

Proper shipping name: Combustible liquid, n.o.s. (linalool)

Class: CBL

Packing group: III

ERG Code: 128

Marine pollutant: No

Remarks: Above applies only to containers over 119 gallons or 450 liters.

Not regulated if shipped in packages less than or equal to 119 gallons (450 liters).



Section 15. Regulatory Information

TSCA list: Not Relevant

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity: This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity: This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards: Fire Hazard; Acute Health Hazard

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. Clean Water Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. Clean Water Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

Massachusetts Right to Know

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know

Linalool (CAS# 78-70-6) 90 - 100%

New Jersey Right to Know

Linalool (CAS# 78-70-6) 90 - 100%

The components of this product are reported in the following inventories:

TSCA: On TSCA Inventory

HMIS Rating

Health: 2

Flammability: 2

Reactivity: 0



NFPA Rating

Health: 1

Flammability: 2

Reactivity: 0

Section 16. Other Information

Disclaimer: The above information 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.

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