

Safety Data Sheet

LINALOOL



Revision Date: 01/09/2020

Page 1 of 10

1. Identification

1.1 Product Identifier

Trade Name or Designation Isolate: LINALOOL
Brand True Terpenes
CAS No. 78-70-6

1.2 Recommended Use and Restrictions on Use

This product is intended for use only by adults 21 or older. For lawful use only. This product is concentrated and should not be used undiluted. Not for use with tobacco or nicotine. Avoid contact with the skin, eyes, wood surfaces, and fabrics. Keep out of reach of children and pets. Consumers should determine and conduct their own safety standards and testing. The United States Food and Drug Administration, and Center for Disease Control and Prevention, and multiple state governments are investigating numerous instances of severe respiratory illnesses and deaths associated with the use of vaping products. Symptoms include breathing difficulty, shortness of breath, chest pain, mild to moderate gastrointestinal illness, fever, or fatigue. To date, True Terpenes has not received any evidence to suggest that this product has caused any adverse health consequences. Do not use this product if you are pregnant, nursing or a person with or at risk of serious health conditions including but not limited to: heart disease, high blood pressure, diabetes, respiratory illness, or a person taking medicine for depression or asthma. Discontinue use and consult your doctor if an adverse reaction occurs. This product is not intended to diagnose, treat, cure or prevent any disease. This product has not been evaluated for safe use in e-cigarettes or any vaping application where the product(s) is/are intentionally vaporized and inhaled. Multiple state governments have banned the sale of flavors, including terpenes, in vaping applications. These laws are in flux.

1.3 Company Information

Company True Terpenes
Address 2416 N Hayden Island Dr.
Portland, OR 97217 USA
Telephone (888) 954-8550
Website TrueTerpenes.com

1.4 Emergency Contact

CHEMTREC (USA) 800-424-9300
CHEMTREC (International) 1+ 703-527-3887

2. Hazard(s) Identification

2.1 Classification of the Substance or Mixture

For the full text of the Hazard Statements listed below, see Section 16.

| Hazard Class | Category | Hazard Statement | Precautionary Statements |
|--------------------|-------------|------------------|---|
| Flammable Liquids | Category 4 | H227 | P210,P233, P240, P241, P242, P243, P280, P303+P361+P353, P370+P378, P403+P235, P501 |
| Skin Irritation | Category 2 | H315 | P264, P280, P302+P352, P321, P332+P313, P362 |
| Skin Sensitisation | Category 1 | H317 | P261, P272, P280, P302+P352, P333+P313, P321, P363, P501 |
| Eye Irritation | Category 2A | H319 | P264, P280, P305+P351+P338, P337+P313 |

Safety Data Sheet

LINALOOL



Revision Date: 01/09/2020

Page 2 of 10

Acute Aquatic Toxicity

Category 3

H402

P273, P391, P501

2.2 GHS Label Elements

Pictograms



Signal Word

Warning

Hazard Statements

Hazard Number

H227
H319
H315
H317
H402

Hazard Statement

Combustible liquid.
Causes serious eye irritation.
Causes skin irritation.
May cause an allergic skin reaction.
Harmful to aquatic life.

Precautionary Statements

Precautionary Number

P210
P261
P264
P272
P273
P280
P302 + P352
P305+P351+P338

P333 + P313
P337 + P313
P362
P370 + P378
P403 + P235
P501

Precautionary Statement

Keep away from heat, sparks and open flame. No smoking.
Avoid breathing dust, fumes, gas, mist, vapors, or spray.
Wash skin thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Avoid release to the environment.
Wear protective gloves, eye protection and skin protection.
IF ON SKIN: Wash with plenty of soap and water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If skin irritation or rash occurs: Get medical advice/ attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash before reuse.
In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
Store in a well-ventilated place. Keep cool.
Dispose of contents/ container to an approved waste disposal plant

2.3 Hazard(s) not Otherwise Classified (HNOC) - none.

3. Composition / Information on Ingredients

3.1 Components of Substance or Mixture

Safety Data Sheet

LINALOOL



Revision Date: 01/09/2020

Page 3 of 10

| Chemical Name | Formula | Molecular Weight | CAS Number | EC Number |
|---------------|---------|------------------|------------|-----------|
| Linalool | C10H18O | 154.25 g/mol | 78-70-6 | 201-134-4 |

Hazardous Components

| Component | Classification | Concentration |
|-----------|---|-----------------|
| Linalool | Flam.liq.4; Skin Irrit 2; Eye Irrit 2A; Skin Sens. 1; Aquatic Acute 3; H227, H315, H317, H319, H402 | 90.00 - 100.00% |

4. First-Aid Measures

4.1 General First Aid Information

| | |
|--------------------------------|---|
| General Advice | Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area. |
| If inhaled | If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician. |
| In case of eye contact | Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. |
| In case of skin contact | Wash off with soap and plenty of water. Consult a physician. |
| If swallowed | Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician. |

4.2 Most Important Symptoms / Effects, Acute and Delayed

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

4.3 Indication of any medical attention or special treatment needed

No data available.

5. Fire-Fighting Measures

5.1 Extinguishing Media

Suitable extinguishing media

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

Unsuitable Extinguishing media

Data NOT use water jet.

5.2 Specific Hazards Arising from the Substance or Mixture

Data not available.

5.3 Special Protective Equipment for Firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further Information

Use water spray to cool unopened containers.

6. Accidental Release Measures

Safety Data Sheet

LINALOOL



Revision Date: 01/09/2020

Page 4 of 10

6.1 Personal Precautions, Protective Equipment and Emergency Procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas. For personal protection see section 8.

6.2 Environmental Precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Cleanup and Containment Methods and Materials

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local/national regulations (see section 13). Keep in suitable, closed containers for disposal.

6.4 Reference to Other Sections

For disposal see section 13.

7. Handling and Storage

7.1. Precautions for Safe Handling and Storage Conditions

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge. For precautions see section 2.2.

Keep container tightly closed in a dry and well-ventilated place. Storage class (TRGS 510): 10: Combustible liquids

8. Exposure Controls / Personal Protection

8.1 Control Parameters

Components with workplace control parameters

Contains no substances with occupational exposure limit values.

Hazardous components without workplace control parameters.

8.2 Exposure Controls

Engineering Controls

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

Eye/Face Protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin Protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact

Material: Nitrile rubber

Minimum layer thickness: 0.4 mm

Break through time: 480 min

Material tested: Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: 76 min

Safety Data Sheet

LINALOOL



Revision Date: 01/09/2020

Page 5 of 10

Material tested: Dermatrill® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory Protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. Aldrich - 147524 Page 5 of 9 If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of Environmental Exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

9. Physical and Chemical Properties

9.1. Basic Physical and Chemical Properties

| | |
|--|--|
| Appearance | Clear, colorless to pale yellow liquid |
| Physical State | Liquid |
| Odor | Sweet, Floral Odor |
| Odor Threshold | Data not available. |
| pH | Data not available. |
| Melting Point / Freezing Point | Freezing point: < -74 °C (< -101 °F) - OECD Test Guideline 102 |
| Initial Boiling Point and Boiling Range | 194 - 197 °C (381 - 387 °F) at 960 hPa (720 mmHg) - lit. |
| Flash Point | 78 °C (172 °F) |
| Evaporation Rate | Data not available. |
| Flammability | Data not available. |
| Flammability / Explosive Limits | Data not available. |
| Vapor Pressure | 0 hPa (0 mmHg) at 25 °C (77 °F) - OECD Test Guideline 104 |
| Vapor Density | Data not available. |
| Relative Density | 0.87 g/cm ³ at 25 °C (77 °F) - lit. |
| Solubility (Water) | Slightly soluble |
| Partition Coefficient | log Pow: 2.84 at 25 °C (77 °F) - OECD Test Guideline 107 |
| Auto-ignition Temperature | 260 °C (500 °F) at 994 hPa (746 mmHg) |
| Decomposition Temperature | Data not available. |
| Viscosity | Data not available. |
| Explosive Properties | Data not available. |
| Oxidizing Properties | Data not available. |

Safety Data Sheet

LINALOOL



Revision Date: 01/09/2020

Page 6 of 10

Surface Tension

8.3 mN/m at 20 °C (68 °F)

10. Stability and Reactivity

10.1. Reactivity

Data not available.

10.2. Chemical Stability

Stable under recommended storage conditions.

10.3. Possibility of Hazardous Reactions

Data not available.

10.4. Conditions to Avoid

Heat, flames and sparks.

10.5. Incompatible Materials

Strong oxidizing agents

10.6. Hazardous Decomposition Products

Hazardous decomposition products formed under fire conditions. - Carbon oxides Other decomposition products - No data available In the event of fire: see section 5

11. Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity - Oral Exposure

LD50 Oral - Rat - male and female - 2,790 mg/kg
(OECD Test Guideline 401)

Acute Toxicity - Dermal Exposure

LD50 Dermal - Rabbit - > 5,610 mg/kg
(OECD Test Guideline 402)

Acute Toxicity - Inhalation Exposure

Data not available.

Acute Toxicity - Other Information

Data not available.

Skin Corrosion and Irritation

Skin - Rabbit
Result: Irritating to skin. - 4 h
(OECD Test Guideline 404)

Serious Eye Damage and Irritation

Eyes - Rabbit
Result: Irritating to eyes
(OECD Test Guideline 405)

Respiratory or Skin Sensitization

-Mouse
Result: May cause sensitisation by skin contact.
Skin sensitisation
(OECD Test Guideline 429)

Safety Data Sheet

LINALOOL



Revision Date: 01/09/2020

Page 7 of 10

Germ Cell Mutagenicity

Mouse
Lymphocyte
Result: negative

OECD Test Guideline 474
Mouse - male and female
Result: negative

Carcinogenicity

IARC: 3 - 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.

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.

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.

Reproductive Toxicity

Data not available.

Specific Target Organ Toxicity from Single Exposure

Data not available.

Specific Target Organ Toxicity from Repeated Exposure

Data not available.

Aspiration Hazard

Data not available.

Additional Toxicology Information

Repeated dose toxicity - Rat - male and female - Oral - NOAEL: 117 mg/kg - OECD Test Guideline 407
RTECS: RG5775000

To the best of our knowledge, the chemical, physical and toxicological properties have not been thoroughly investigated.

12. Ecological Information

12.1. Toxicity

Toxicity to fish static test LC50 - Oncorhynchus mykiss (rainbow trout) - 27.8 mg/l - 96 h
(OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates Immobilization EC50 - Daphnia magna (Water flea) - 59 mg/l - 48 h
(OECD Test Guideline 202)

Toxicity to algae static test EC50 - Desmodesmus subspicatus (green algae) - 156.7 mg/l - 96 h

12.2. Persistence and Degradability

Biodegradability aerobic - Exposure time 28 d
Result: 64.2% - Readily biodegradable.
(OECD Test Guideline 301D)

Safety Data Sheet

LINALOOL



Revision Date: 01/09/2020

Page 8 of 10

12.3. Bioaccumulative Potential

Data not available.

12.4. Mobility in Soil

Data not available.

12.5. Results of PBT and vPvB Assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted.

12.6. Other Adverse Ecological Effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Harmful to aquatic life.

13. Disposal Considerations

13.1 Waste Treatment Methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. Transport Information

14.1 Transportation by Land-Department of Transportation (DOT, United States of America)

NA-number: 1993 Class: NONE Packing group: III

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

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

14.2 Transportation by Air - International Air Transport Association (IATA)

Not dangerous goods.

14.3 Transportation -International Maritime Dangerous Goods (IMDG)

Not dangerous goods.

Further Information

Data not available.

15. Regulatory Information

15.1 Occupational Safety and Health Administration (OSHA) Hazards

No OSHA hazards.

15.2 Superfund Amendments and Reauthorization Act (SARA) 302 Extremely Hazardous Substances

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

15.3 Superfund Amendments and Reauthorization Act (SARA) 311/312 Hazardous Chemicals

Fire Hazard, Acute Health Hazard

15.4 Superfund Amendments and Reauthorization Act (SARA) 313 Toxic Release Inventory (TRI)

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.

Safety Data Sheet

LINALOOL



Revision Date: 01/09/2020

Page 9 of 10

15.5 Massachusetts Right-to-Know Substance List

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

15.6 Pennsylvania Right-to-Know Hazardous Substances

Linalool CAS# 78-70-6

15.7 New Jersey Worker and Community Right-to-Know Components

Linalool CAS# 78-70-6

15.8 California Proposition 65

This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

16. Other Information

16.1. Full Text of Hazard Statements referred to under sections 2 and 3.

| | |
|---------------|--------------------------------------|
| Aquatic Acute | Acute aquatic toxicity |
| Flam. Liq. | Flammable liquids |
| Skin Irrit. | Skin Irritation |
| Eye Irrit. | Eye Irritation |
| Skin Sens. | Skin sensitisation |
| H227 | Combustible liquid. |
| H315 | Causes skin irritation. |
| H317 | May cause an allergic skin reaction. |
| H319 | Causes serious eye irritation. |
| H402 | Harmful to aquatic life. |

16.2. Miscellaneous Hazard Classes

| | |
|--|----------------|
| Canadian Carcinogenicity Hazard Class | Not Available. |
| Physical Hazards Not Otherwise Classified (PHNOC) | Not Available. |
| Health Hazards Not Otherwise Classified (HHNOC) | Not Available. |
| Biohazardous Infectious Materials Hazard Class | Not Available. |

16.3. National Fire Protection Association (NFPA) Rating

| | |
|--------------------------|---|
| Health Hazard | 2 |
| Fire Hazard | 2 |
| Reactivity Hazard | 0 |

16.4. HMIS Rating

| | |
|------------------------------|---|
| Health | 2 |
| Chronic Health Hazard | |
| Flammability | 2 |
| Physical Hazard | 0 |

16.5 Document Revision

Safety Data Sheet

LINALOOL



Revision Date: 01/09/2020

Page 10 of 10

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Version # 03

Disclaimer True Terpenes cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for use, handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on knowledge and experience currently available. To date, True Terpenes has not received any evidence to suggest that this product has caused any adverse health consequences. The above information relates only to this product and not to its use in combination with any other material or any particular process, and is designed only as guidance for the handling, use, processing, storage, transportation, and disposal. It should not be considered as a guarantee or quality specification. This product has not been evaluated for safe use in e-cigarettes or any vaping application where the product(s) is/are intentionally vaporized and inhaled. True Terpenes has performed no testing on these products in e-cig/vaping applications. It is the sole responsibility of the individual(s) purchasing this product to assess its safety in the final application. The above information relates only to this product and not to its use in combination with any other material or any particular process and is designed only as guidance for the handling, use, processing, storage, transportation, and disposal, and should not be considered as a guarantee or quality specification. The above information is based on data provided by and collected from recognized sources such as distributors, manufacturers, and technical groups and is considered to be accurate to the best of True Terpenes' knowledge-based upon current information as of the date of this document. It is the responsibility of the user to review all safety information about this product and determine its safety and suitability in their own uses, processes, and operations. Appropriate warnings and safe handling procedures should be provided to all handlers and users, taking into account the intended use and the specific conditions and factors relating to such use in accordance with all applicable laws and regulations.

Revision Information This document has undergone significant changes and should be reviewed in its entirety.