

Material Safety Data Sheet (MSDS)

L-Limonene

Revision Date: 22-September-2025

Version: 1.0

Section 1: Product Identification

- **Product Name:** L-Limonene
- **Chemical Formula:** C₁₀H₁₆
- **CAS No:** 5989-54-8
- **Synonyms:** p-Mentha-1,8-diene, 1-Methyl-4-(1-methylethenyl)cyclohexene, Dipentene
- **Recommended Use:** Flavoring agent, fragrance ingredient, solvent

Section 2: Hazards Identification

- **Classification (GHS):** Flammable Liquid, Skin Irritant, Skin Sensitizer, Aquatic Acute, Aquatic Chronic
- **Signal Word:** Warning
- **Hazard Statements:**

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- Flammable liquid and vapor
- Causes skin irritation
- May cause allergic skin reaction
- Very toxic to aquatic life
- Very toxic to aquatic life with long lasting effects

• **Precautionary Statements:**

- Keep away from heat, sparks, open flames, and hot surfaces
- Avoid contact with skin and eyes
- Wear protective gloves and eye protection
- Avoid release to the environment
- Wash hands thoroughly after handling

Section 3: Composition / Information on Ingredients

- **Concentration:** >95%

Section 4: First Aid Measures

- **Inhalation:** Remove victim to fresh air and keep at rest. Seek medical attention if symptoms develop.

- **Skin Contact:** Wash with plenty of soap and water. Remove contaminated clothing. Seek medical advice if irritation persists.
- **Eye Contact:** Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Seek medical attention if irritation continues.
- **Ingestion:** Rinse mouth. Do not induce vomiting. Seek immediate medical attention.

Section 5: Fire-Fighting Measures

- **Suitable Extinguishing Media:** Foam, dry chemical, carbon dioxide (CO₂), water spray.
- **Specific Hazards:** Flammable; vapors may form explosive mixtures with air. Emits carbon oxides under fire conditions.
- **Protective Equipment:** Firefighters should wear self-contained breathing apparatus and protective clothing.

Section 6: Accidental Release Measures

- **Personal Precautions:** Remove all sources of ignition. Use protective equipment. Avoid inhalation of vapors and contact with skin/eyes.
- **Environmental Precautions:** Prevent entry into drains and waterways. Notify authorities if large spills occur.
- **Cleanup Methods:** Absorb with inert material (sand, earth). Collect in suitable container for disposal.

Section 7: Handling and Storage

- **Handling:** Handle in well-ventilated areas. Keep away from heat, sparks, and open flames. Avoid contact with skin and eyes.
- **Storage:** Store in tightly closed containers in a cool, dry, well-ventilated area away from sources of ignition and oxidizing agents.

Section 8: Exposure Controls / Personal Protection

- **Exposure Limits:** Not established for L-Limonene.
- **Engineering Controls:** Ensure adequate ventilation and explosion-proof equipment.
- **Personal Protective Equipment:** Protective gloves, goggles, flame-resistant clothing. Respiratory protection if vapors exceed limits.

Section 9: Physical and Chemical Properties

- **Appearance:** Colorless to pale yellow liquid
- **Odor:** Citrus-like odor
- **Boiling Point:** 175 – 177 °C
- **Flash Point:** 50 °C (closed cup)

- **Solubility:** Insoluble in water; soluble in organic solvents
- **Molecular Weight:** 136.24 g/mol

Section 10: Stability and Reactivity

- **Stability:** Stable under normal handling and storage conditions.
- **Incompatible Materials:** Strong oxidizing agents, strong acids.
- **Hazardous Decomposition Products:** Carbon oxides under fire conditions.

Section 11: Toxicological Information

- **Routes of Exposure:** Inhalation, ingestion, skin and eye contact.
- **Acute Effects:** Causes skin irritation. May cause dizziness or respiratory irritation at high concentrations.
- **Chronic Effects:** May cause sensitization on prolonged or repeated contact.

Section 12: Ecological Information

- **Ecotoxicity:** Very toxic to aquatic organisms with long lasting effects.
- **Persistence and Degradability:** Readily biodegradable but high toxicity to aquatic organisms.
- **Bioaccumulative Potential:** Moderate potential for bioaccumulation.

Section 13: Disposal Considerations

- Dispose of contents/container in accordance with local/regional/national regulations.
- Do not release into the environment.

Section 14: Transport Information

- **UN Number:** UN 2319
- **Proper Shipping Name:** Terpene Hydrocarbons, N.O.S. (L-Limonene)
- **Hazard Class:** 3 (Flammable liquids)
- **Packing Group:** III

Section 15: Regulatory Information

- Complies with Indian chemical safety regulations and international chemical inventory listings.
- Classified as hazardous substance as per GHS.

Section 16: Other Information

- **Disclaimer:** The above information is believed to be correct but does not claim to be exhaustive. Users are responsible for verifying suitability under actual conditions of use. **Triveni chemicals** disclaims any liability for damage resulting from handling or contact.

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