

Material Safety Data Sheet (MSDS)

Clove Oil

Revision Date: 25-September-2025

Version: 1.0

Section 1: Product Identification

- **Product Name:** Clove Oil
- **Chemical Formula:** Not applicable (mixture, major component: eugenol C₁₀H₁₂O₂)
- **CAS No:** 8000-34-8
- **Synonyms:** Oil of clove; Eugenia caryophyllus oil; Syzygium aromaticum oil
- **Recommended Use:** Used as a flavoring agent, fragrance ingredient, and in pharmaceutical and dental formulations.

Section 2: Hazards Identification

- **Classification (GHS):** Skin Irritant (Category 2); Eye Irritant (Category 2A); Skin Sensitizer (Category 1); Aquatic Chronic Toxicity (Category 2).
- **Signal Word:** Warning
- **Hazard Statements:**

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- Causes skin irritation
- Causes serious eye irritation
- May cause an allergic skin reaction
- Toxic to aquatic life with long lasting effects

Section 3: Composition / Information on Ingredients

- **Concentration:** 100%

Section 4: First Aid Measures

- **Inhalation:** Remove to fresh air. If symptoms develop, seek medical attention.
- **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. Get medical attention if irritation persists.
- **Ingestion:** Rinse mouth. Do NOT induce vomiting. Seek medical attention if unwell.

Section 5: Fire-Fighting Measures

- **Suitable Extinguishing Media:** Dry chemical, foam, carbon dioxide (CO₂); water spray.

- **Specific Hazards:** Flammable liquid and vapor; vapors may form explosive mixtures with air; combustion may produce carbon oxides.
- **Protective Equipment:** Firefighters should wear self-contained breathing apparatus and protective clothing.

Section 6: Accidental Release Measures

- **Personal Precautions:** Use personal protective equipment. Avoid breathing vapors. Ensure adequate ventilation. Eliminate ignition sources.
- **Environmental Precautions:** Prevent entry into drains and waterways.
- **Cleanup Methods:** Absorb with inert material (sand, earth). Collect in suitable container for disposal.

Section 7: Handling and Storage

- **Handling:** Avoid inhalation of vapors and contact with skin/eyes. Use with adequate ventilation. Keep away from ignition sources.
- **Storage:** Keep container tightly closed. Store in a cool, dry, well-ventilated place away from heat and oxidizing agents.

Section 8: Exposure Controls / Personal Protection

- **Exposure Limits:** ACGIH TLV 100 ppm (TWA); OSHA PEL 150 ppm (TWA).
- **Engineering Controls:** Provide adequate ventilation and local exhaust if needed.
- **Personal Protective Equipment:** Chemical-resistant gloves, safety goggles, protective clothing. Respirator if ventilation is inadequate.

Section 9: Physical and Chemical Properties

- **Appearance:** Yellow to brown viscous liquid
- **Odor:** Spicy, clove-like odor
- **Boiling Point:** 251 °C
- **Flash Point:** 115 °C (closed cup)
- **Solubility:** Slightly soluble in water; soluble in alcohol and organic solvents
- **Molecular Weight:** Not applicable (mixture)

Section 10: Stability and Reactivity

- **Stability:** Stable under normal conditions.
- **Incompatible Materials:** Strong oxidizing agents.
- **Hazardous Decomposition Products:** Carbon oxides under fire conditions.

Section 11: Toxicological Information

- **Routes of Exposure:** Inhalation, ingestion, skin and eye contact.
- **Acute Effects:** Causes serious eye irritation; may cause drowsiness or dizziness; harmful if swallowed in large amounts.
- **Chronic Effects:** Prolonged or repeated exposure may cause dermatitis and central nervous system effects.

Section 12: Ecological Information

- **Ecotoxicity:** May be harmful to aquatic life in high concentrations.
- **Persistence and Degradability:** Expected to be readily biodegradable.
- **Bioaccumulative Potential:** Low potential.

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:** Not regulated
- **Proper Shipping Name:** Clove Oil
- **Hazard Class:** Not classified as dangerous goods
- **Packing Group:** Not applicable

Section 15: Regulatory Information

- Complies with Indian chemical safety regulations and listed under international chemical inventories (TSCA, EINECS, etc.).
- 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.