



NEWAY SINOPHC TECH. LIMITED

ADD:RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
Email:marketing01@newayphc.com; Phone:+86-021-50350029 <https://www.newayphc.com>

Safety Data Sheet (MSDS)

- Clove Bud Oil

According to: GB/T 16483, GB/T 17519; GHS, IMDG, IATA Standards **Product Name:** Clove Bud Oil (Natural Essential Oil) **CAS Number:** 8000-34-8 **Product Number:** CBO-20260222 **Brand:** SIGALD **Revision Date:** 22 February 2026 **Supplier:** NEWAY SINOPHC TECH. LIMITED **Address:** RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE. **Tel/Fax:** +86-021-50350029 **Emergency Phone:** +86-021-50350029 (CHEMTREC)

SECTION 1: Identification of the Substance/Mixture and of the Company/Undertaking

1.1 Product Identifiers

- Product Name: Clove Bud Oil
- Synonyms: Clove Oil (Bud); Natural Clove Essential Oil
- CAS-No.: 8000-34-8
- Main Component: Eugenol (CAS 97-53-0, ≥85%)
- Product Number: CBO-20260222
- Brand: SIGALD

1.4 Relevant Identified Uses and Uses Advised Against

- **Identified Uses:** Cosmetic/fragrance raw material; food flavor enhancer (food grade); pharmaceutical antibacterial raw material; aromatherapy oil; natural preservative.
- **Uses Advised Against:** Not for undiluted direct skin/mucous membrane application; non-food grade not for food contact/ingestion; not for use as a fuel or industrial solvent in large quantities.

SECTION 2: Hazards Identification

2.1 GHS Classification

- Eye irritation: Category 2 (Mild irritation, reversible)
- Skin irritation: Category 2 (Mild irritation, reversible for undiluted oil)
- Specific target organ toxicity (single exposure) - Narcotic effects: Category 3 (High concentration inhalation)

2.2 GHS Label Elements

- **Hazard Pictogram:** (Warning)
- **Signal Word:** WARNING
- **Hazard Statements:**
 - H315: Causes skin irritation (undiluted)
 - H319: Causes serious eye irritation
 - H336: May cause drowsiness or dizziness (inhalation of high concentration vapor)
- **Precautionary Statements:**
 - P264: Wash skin thoroughly after handling
 - P280: Wear protective gloves/eye protection
 - 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
 - P370+P378: In case of fire: Use dry powder, CO₂ or foam for extinction

2.3-2.6 Hazards Summary

- **Physical/Chemical Hazards:** Combustible liquid (flash point ≥100°C); no explosion risk; may oxidize on long-term contact with air (no hazardous products); non-corrosive.
- **Health Hazards:** Undiluted oil causes mild skin/eye irritation; high concentration vapor inhalation may cause drowsiness/dizziness; no acute toxic effects at diluted use dosage; no carcinogenic/mutagenic/reproductive toxicity.

- **Environmental Hazards:** Slightly toxic to aquatic organisms; fully biodegradable in natural environment; no bioaccumulation potential.
- **Other Hazards:** No additional hazards identified; diluted oil ($\leq 5\%$) has no irritation risk for normal use.

SECTION 3: Composition/Information on Ingredients

- **Substance/Mixture:** Natural mixture (essential oil)

- **Main Active Components:**

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Component	CAS No.	Concentration (w/w)	Hazard Classification
Eugenol	97-53-0	85.0-90.0%	Mild eye/skin irritation
Caryophyllene	87-44-5	5.0-8.0%	Non-hazardous
Humulene	6753-98-6	1.0-3.0%	Non-hazardous
Other plant terpenes-		1.0-2.0%	Non-hazardous

- **EC-No.:** N/A (natural essential oil mixture)

SECTION 4: First Aid Measures

4.1 First-Aid Measures

- **If Inhaled:** Move to fresh air, keep respiratory tract unobstructed. Rest in a comfortable position for breathing; get medical advice if dizziness/drowsiness or coughing persists.
- **In Case of Skin Contact:** Remove contaminated clothing; rinse skin with plenty of soap and water for 5-10 minutes (do not use organic solvents). Apply natural vegetable oil if irritation occurs.
- **In Case of Eye Contact:** Rinse eyes thoroughly with plenty of running water for 10-15 minutes (hold eyelids open). Remove contact lenses if present. Consult a doctor immediately if redness, tearing or blurred vision persists.
- **If Swallowed:** Rinse mouth with water **do not induce vomiting**. Drink a small amount of milk/vegetable oil if conscious; seek immediate medical attention (provide product COA to physician).

4.2-4.4 Symptoms and Medical Notes

- **Acute Effects:** Skin redness/itching (undiluted contact); eye redness/tearing/burning; dizziness/drowsiness (high concentration inhalation); mild gastrointestinal discomfort (if swallowed).
- **Delayed Effects:** No known delayed toxic effects based on current data.
- **Medical Notes:** Inform physician of the product name, CAS number and main component (eugenol); treat symptomatically; no specific antidote available.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- **Suitable:** Dry powder, carbon dioxide (CO₂), foam, water spray (cool container only).
- **Unsuitable:** High-pressure water jet (may spread burning liquid; ineffective for oil fire).

5.2 Special Hazards Arising from the Substance

- Combustible liquid; burning produces non-hazardous carbon oxides (CO, CO₂) and faint aromatic smoke; no toxic/explosive combustion products.
- No explosive vapor-air mixture formation under normal storage/use conditions.

5.3 Advice for Firefighters

- Wear standard fire-fighting gear (helmet, fire suit, self-contained breathing apparatus) for large fires to avoid inhalation of combustion fumes.



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- Cool exposed containers with water spray to prevent thermal expansion and leakage; continue cooling after fire extinguishment.
- Fight fire from upwind and a safe distance; avoid contact with burning oil and combustion products.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions

- Wear nitrile rubber gloves, safety glasses and protective lab coat for spill handling; wear a face shield if splashing is possible.
- Ensure good ventilation in the spill area; avoid breathing vapor, especially in confined spaces.
- Evacuate non-essential personnel for large spills.

6.2 Environmental Precautions

- Prevent spilled oil from entering sewers, rivers, lakes or soil (use sand/vermiculite to contain and absorb).
- Do not discharge contaminated waste directly into the environment; collect and treat according to local regulations.

6.3 Containment and Cleaning Up

- **Small Spill:** Absorb with inert materials (sand, vermiculite, diatomaceous earth); place absorbed waste in sealed containers for incineration. Wipe the area with ethanol and ventilate fully.
- **Large Spill:** Contain with dikes to prevent spread; transfer spilled oil to sealed brown glass/stainless steel drums with a pump for recycling/disposal. Flush the contaminated area with water (collect wastewater for biological treatment).

6.4 Reference

- Disposal see Section 13; personal protection see Section 8.

SECTION 7: Handling and Storage

7.1 Precautions for Safe Handling

- Operate in a well-ventilated area; avoid breathing vapor and direct contact with undiluted oil (skin/eyes/mucous membranes).
- Use dedicated glass/stainless steel dispensing equipment; avoid mixing with strong acids, strong bases, oxidizing agents and excessive water.
- Dilute the oil with vegetable oil/ethanol before use in cosmetic/food formulations; do not use undiluted.
- Wash hands thoroughly with soap and water after handling; do not eat/drink/smoke in the work area.

7.2 Conditions for Safe Storage

- **Storage Conditions:** Store in a cool, dark, well-ventilated warehouse at **5-25°C**; use brown glass/stainless steel containers, keep tightly sealed (prevent oxidation/volatilization). Avoid direct sunlight, high temperature (>30°C), open flame and long-term contact with air.
- **Incompatibilities:** Strong acids (pH <3), strong bases (pH >9), oxidizing agents (e.g., hydrogen peroxide, chlorine), heavy metal salts, excessive water.
- **Storage Class (TRGS 510):** 3 (Combustible Liquids, low hazard)
- **Shelf Life:** 18 months (unopened, specified conditions); 6 months after opening (sealed and refrigerated at 5-10°C).

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

- **Eugenol (main component):** TWA 5 mg/m³ (air) (recommended); no official OEL for clove bud oil mixture.
- **Biological Exposure Indices:** No relevant data available.

8.2 Exposure Controls

- **Engineering Controls:** Local exhaust ventilation (for large-scale dispensing/heating); general ventilation for routine handling to maintain low vapor concentration.
- **Personal Protective Equipment (PPE):**
 - Eye/Face Protection: Safety glasses (routine handling); face shield (large-scale spill/dispensing).
 - Skin Protection: Nitrile rubber gloves (thickness ≥ 0.1 mm), protective lab coat; avoid latex gloves (poor compatibility with essential oils).
 - Respiratory Protection: Half-face respirator with organic vapor cartridge (high concentration vapor/poor ventilation); no respirator required for normal diluted use.
- **Hygiene Measures:** Dedicated hand washing station with soap and water near the work area; provide emergency eye wash and shower facilities for large-scale operation areas.

SECTION 9: Physical and Chemical Properties

Property	Value (25°C)	Unit
Physical State	Liquid	-
Color	Colorless to pale yellow	-
Odor	Strong characteristic clove aromatic scent	-
Melting Point	≤ -10	°C
Boiling Point	250-260 (mixture)	°C
Flash Point (Closed Cup)	≥ 100	°C
Autoignition Temperature	> 350	°C
Relative Density (20/20°C)	1.038-1.060	g/cm ³
Refractive Index (20°C)	1.5280-1.5380	-
Viscosity	10-15	mPa·s
Water Solubility	Slightly soluble (< 0.1 g/100 mL)	-
Solubility	Miscible with ethanol, ether, vegetable oil, essential oils; 1:2 soluble in 70% ethanol	-
Vapor Pressure	< 0.01	hPa
Flammability	Combustible liquid	-
Explosive Properties	Not explosive	-
Oxidizing Properties	None	-
Decomposition Temperature	> 200	°C

SECTION 10: Stability and Reactivity

10.1 Chemical Stability

- Stable under recommended storage and use conditions (5-25°C, sealed, away from light); slight oxidation on long-term contact with air (color darkens, no hazardous products).
- No decomposition under normal use conditions.

10.2 Possibility of Hazardous Reactions

- No hazardous reactions under normal use/storage; no polymerization risk.

10.3 Conditions to Avoid

- High temperature ($> 200^\circ\text{C}$), direct strong sunlight, open flame, long-term contact with air, contact with incompatible materials.

10.4 Incompatible Materials

- Strong acids, strong bases, oxidizing agents, chlorine-containing compounds, heavy metal salts, excessive water.

10.5 Hazardous Decomposition Products

- Thermal decomposition at >200°C produces non-hazardous carbon oxides (CO, CO₂) and natural terpene vapors; no toxic/hazardous decomposition products.

SECTION 11: Toxicological Information

11.1 Toxicological Effects (based on clove bud oil and main component eugenol)

- **Acute Toxicity:** Oral (Rat, LD₅₀) = 2600 mg/kg; Dermal (Rabbit, LD₅₀) = > 5000 mg/kg; Inhalation (Rat, LC₅₀) = > 1000 mg/m³ (4h).
- **Skin Corrosion/Irritation:** Mild irritation (Rabbit, 4h undiluted exposure) – reversible redness; no irritation for diluted oil (≤5%).
- **Eye Damage/Irritation:** Mild to moderate irritation (Rabbit, 24h exposure) – redness/tearing, reversible within 72h; no permanent damage.
- **Sensitization:** No skin/respiratory sensitization (Guinea pig test) for diluted oil; rare sensitization for undiluted long-term contact.
- **Mutagenicity/Carcinogenicity:** No mutagenic effect (Ames test); not classified as carcinogenic by IARC/EPA/NTP.
- **Reproductive Toxicity:** No reproductive/developmental toxicity (Rat test) at normal diluted dosage.
- **Target Organ Toxicity:** Single exposure to high concentration vapor may cause mild narcotic effects (drowsiness/dizziness); no target organ toxicity for repeated diluted use.
- **Aspiration Hazard:** Low (low vapor pressure, high flash point; no aspiration risk for normal use).

11.2 Additional Information

- The toxicological properties are well studied; the product is safe for cosmetic, food and pharmaceutical use when diluted according to recommended dosage.

SECTION 12: Ecological Information

12.1 Toxicity

- Fish (Zebrafish, LC₅₀) = 600 mg/L (96h)
- Daphnia (EC₅₀) = 400 mg/L (48h)
- Algae (EC₅₀) = 700 mg/L (72h)
- **Conclusion:** Slightly toxic to aquatic organisms; no acute aquatic toxicity at normal discharge levels (diluted).

12.2-12.7 Ecological Properties

- **Persistence and Degradability:** Fully biodegradable (BOD₅/COD = 0.7) in 28 days under aerobic aquatic conditions; no persistent residues in natural environment.
- **Bioaccumulative Potential:** Low (log Kow = 3.5 for eugenol; no bioaccumulation in aquatic food chain).
- **Mobility in Soil:** Low mobility; binds to soil organic matter, no leaching risk to groundwater.
- **PBT/vPvB Assessment:** Not classified as PBT/vPvB according to GHS/EU regulations.
- **Endocrine Disrupting Properties:** No data available; no known endocrine disruption effect.
- **Other Adverse Effects:** No long-term adverse effects on terrestrial/aquatic ecosystems at normal use and discharge levels; natural degradation with no environmental pollution.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- **Product Waste:** Unused/expired oil – incinerate in a licensed waste incineration plant (complete combustion); or recycle for industrial fragrance use if qualified.
- **Contaminated Waste:** Spill absorbents (sand/vermiculite) – incinerate or dispose as non-hazardous waste (local regulations).

- **Wastewater:** Contaminated wastewater – treat by biological wastewater treatment system (biodegradation) before discharge; comply with local effluent standards.
- **Packaging Waste:** Rinse packaging with ethanol/vegetable oil (recycle the rinse liquid); brown glass/stainless steel packaging – recycle; dispose of contaminated packaging as non-hazardous waste.

13.2 Disposal Notes

- Comply with local, national and international waste disposal regulations; do not dump waste directly into the environment/soil/water bodies.
- Food grade product waste shall be disposed separately from industrial grade waste if required by local regulations.

SECTION 14: Transport Information

14.1-14.5 Transport Classification

- UN Number: ADR/RID: -; IMDG: -; IATA-DGR: -
- UN Proper Shipping Name: Not dangerous goods (ADR/RID/IMDG/IATA)
- Transport Hazard Class: None
- Packaging Group: None
- Environmental Hazards: IMDG Marine Pollutant: No; ADR/RID/IATA: No

14.6-14.7 Transport Precautions

- **General:** Classified as non-hazardous goods; transport by ordinary closed vehicles (for combustible liquids).
- **Conditions:** Transport at 5-30°C; avoid direct sunlight, high temperature, open flame and collision.
- **Packaging:** Use sealed brown glass/stainless steel drums; ensure no leakage; mark "Combustible Liquid" and "Keep Away from Heat/Light" on the package.
- **Incompatibilities:** Do not transport with strong acids, strong bases, oxidizing agents, food (non-food grade) and pharmaceutical raw materials (unlabeled).

SECTION 15: Regulatory Information

15.1 National & International Regulations

- **China:** Hazardous Chemical Safety Management Regulation (Non-hazardous classification); Cosmetic Safety Technical Specifications (2021); Food Additive Use Standard (GB 2760, food grade).
- **GHS (Rev.9):** Classification as per Section 2.1 (Skin/Eye Irritation, Narcotic Effects Cat 3).
- **EU (REACH):** Registered in ECHA; not listed in SVHC Candidate List; complies with CLP regulation.
- **US (TSCA):** Listed on TSCA Inventory; FDA compliant (food/cosmetic grade); FCC certified (food grade).
- **International:** Complies with **IFRA (International Fragrance Association)** and **ISO 4720 (Essential Oil Standards)**.

15.2 Other Regulations

- Comply with local essential oil, cosmetic, food and pharmaceutical raw material regulations; industrial use shall meet occupational health and safety standards.

SECTION 16: Other Information

- **Further Information:** This MSDS is based on current scientific knowledge and complies with GB/T 16483, GB/T 17519 and GHS (Rev.9) standards. It is for the safe handling, storage, transport and disposal of clove bud oil.
- **Liability Note:** The supplier is not liable for any damage caused by improper use (e.g., undiluted direct contact), non-compliance with safety precautions or use beyond the product's intended scope.



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- **Update Note:** This MSDS will be updated in a timely manner if new scientific safety data becomes available.



纳维盈医化科技
NEWAY SINOPHC TECH