



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) - Terpineol

According to: GB/T 16483, GB/T 17519, GHS Rev.9, FDA, REACH
Product Name: Terpineol (Mainly α -Terpineol)
CAS Number: 8000-41-7
Product Number: TER-20260218
Brand: SIGALD
Revision Date: 18 FEB 2026
Supplier: NEWAY SINOPHC TECH. LIMITED
Address: RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE
Telephone/Fax: +86-021-50350029
Emergency Telephone: +86-021-50350029 (24h Chemical Emergency Response)

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

1.1 Product Identifiers

- Product Name: Terpineol (α -Terpineol as main component)
- CAS-No.: 8000-41-7
- MDL No.: MFCD00080676
- Synonyms: Terpineol isomers; α -Terpineol; 2-(4-Methyl-1-cyclohexen-1-yl)ethanol
- Product Number: TER-20260218
- Form: Colorless to pale yellow liquid with floral-pine aroma (fragrance/industrial grade)

1.4 Relevant Identified Uses and Uses Advised Against

- **Identified Uses:** Raw material for fragrance & flavor, cosmetics, daily chemicals, pharmaceuticals; solvent for fine chemicals; plasticizer for rubber products.
- **Uses Advised Against:** Not for direct oral consumption in large quantities; not for use as a food additive beyond national dosage standards; not for use in high-temperature (>200°C) industrial processes without thermal stabilization; not for medical injection use.

SECTION 2: Hazards Identification

2.1 GHS Classification

- Flammable liquids (Category 4) - H227
- Skin irritation (Category 4) - H315
- Serious eye irritation (Category 4) - H319
- Specific target organ toxicity - single exposure (respiratory tract, Category 3) - H335

2.2 GHS Label Elements

- Hazard Pictogram: (Flammable liquid)
- Signal Word: **Warning**
- **Hazard Statements:**
 - H227: Combustible liquid
 - H315: Causes mild skin irritation
 - H319: Causes mild eye irritation
 - H335: May cause respiratory tract irritation
- **Precautionary Statements:**
 - P210: Keep away from heat, sparks, open flames and hot surfaces. No smoking.
 - P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
 - P264: Wash hands thoroughly after handling.
 - P280: Wear protective gloves/eye protection/face protection.
 - P302+P352: If on skin: Wash with plenty of water/soap.
 - P304+P340: If inhaled: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
 - 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.
 - P370+P378: In case of fire: Use CO₂, dry chemical or foam for extinction.
 - P501: Dispose of contents/container in accordance with local/regional/national/international regulations.



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2.3-2.6 Hazards Summary

- **Physical/Chemical Hazards:** Combustible liquid (flash point $\geq 88^{\circ}\text{C}$); no explosion risk under normal conditions; thermal decomposition at $>200^{\circ}\text{C}$ produces carbon monoxide and small amounts of terpene hydrocarbons, no toxic hazardous by-products.
- **Health Hazards:** Mild skin/eye irritation upon direct contact; vapor may cause mild respiratory tract irritation if inhaled in large quantities; no acute systemic toxicity, no chronic carcinogenic/mutagenic effects.
- **Environmental Hazards:** Slightly toxic to aquatic organisms; fully biodegradable (BOD5/COD >0.6) in natural environment; low bioaccumulation potential, no long-term environmental pollution.
- **Other Hazards:** No additional hazards identified for professional standard handling.

SECTION 3: Composition/Information on Ingredients

- **Substance/Mixture:** Mixture (monoterpene alcohol isomers, no hazardous additives)
- **Main Active Ingredient:** Terpineol (CAS:8000-41-7, content $\geq 95.0\%$, mainly α -Terpineol $\geq 80.0\%$)
- **Minor Components:** Small amount of terpene derivatives (limonene, terpinene, content $\leq 5.0\%$, non-hazardous)
- **Hazardous Ingredients:** None (all components comply with GHS non-hazardous standards except for flammability and mild irritation)
- **Impurities:** No detectable toxic impurities (meets industrial standards for heavy metals and residual solvents)

SECTION 4: First Aid Measures

4.1 Description of First-Aid Measures

- **If Inhaled:** Remove the victim to fresh air immediately, keep warm and at rest. Ensure unobstructed breathing; no special treatment for mild irritation; consult a physician if cough, chest tightness or other symptoms persist.
- **In Case of Skin Contact:** Rinse the affected area with plenty of running water and neutral soap for 5~10 minutes; remove contaminated clothing and wash it with detergent before reuse. Mild redness/irritation is reversible without special treatment.
- **In Case of Eye Contact:** Rinse eyes thoroughly with plenty of running water for 10~15 minutes (lift upper and lower eyelids to rinse the conjunctiva); remove contact lenses if present. Consult an ophthalmologist if irritation, redness or blurred vision persists for more than 24h.
- **If Swallowed:** Rinse mouth with clean water immediately; **do not induce vomiting** (may cause respiratory tract irritation by liquid aspiration). Drink a small amount of milk or water to dilute; consult a physician if gastrointestinal discomfort (nausea, abdominal pain) occurs.

4.2 Most Important Symptoms and Effects

- **Acute Effects:** Mild skin/eye redness, itching and irritation; cough, sore throat and mild respiratory tract irritation from excessive vapor inhalation; mild nausea from accidental ingestion.
- **Delayed Effects:** No known delayed toxic effects based on current scientific data; prolonged skin contact may cause mild dryness in sensitive individuals.
- **No Specific Antidote:** Treat symptomatically according to the actual condition; inform the physician of the product composition (terpineol isomers) for targeted treatment.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- **Suitable:** Carbon dioxide (CO_2), dry chemical powder, foam fire extinguishers (all low-temperature fire extinguishers).
- **Unsuitable:** Do not use high-pressure water to flush directly (may cause liquid splashing and spread the fire); cold water spray can be used to cool the container.

5.2 Special Hazards Arising from the Substance or Mixture



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- Combustible liquid; vapor may form flammable mixtures with air in a closed and poorly ventilated area (no explosion risk under normal open conditions).
- Thermal decomposition at high temperature (>200°C) produces carbon monoxide and terpene hydrocarbon vapors; inhalation of combustion fumes may cause respiratory tract irritation.
- No toxic or corrosive gases generated during combustion; the burning residue is non-toxic carbon deposit.

5.3 Advice for Firefighters

- Wear **standard fire-fighting gear** (fire helmet, fire suit, self-priming breathing apparatus, anti-static boots) to avoid inhalation of combustion fumes and skin contact with hot liquid.
- Cool the burning and surrounding containers with cold water spray to prevent container rupture due to high temperature.
- Cut off the fire source and evacuate flammable materials in the surrounding area; fight the fire from the upwind direction.
- After the fire is extinguished, ventilate the fire scene thoroughly to remove residual vapor; dispose of the fire residue in accordance with chemical waste regulations.

SECTION 6: Accidental Release Measures

6.1 Personal Precautions

- Wear nitrile rubber gloves, chemical safety goggles and anti-static protective clothing; wear a respiratory mask (organic vapor type) in poorly ventilated areas to avoid inhalation of vapor.
- Cut off all heat sources and open fire in the spill area; eliminate static electricity (ground the handling equipment); evacuate non-essential personnel and set up a warning zone.
- Do not touch the spilled liquid with bare hands; do not eat, drink or smoke in the spill area.

6.2 Environmental Precautions

- Prevent the spilled liquid from flowing into sewers, rivers, lakes or soil (slightly toxic to aquatic organisms); use sand or earth to block the overflow if necessary.
- Do not flush the spilled liquid directly into the sewer with water (may cause environmental pollution and sewer blockage).

6.3 Containment and Cleaning Up

- **Small Spill:** Absorb the spilled liquid with inert absorbent materials (sand, diatomite, vermiculite) or absorbent cotton; collect the absorbent material into a sealed chemical waste container for disposal. Wipe the spill area with ethanol and rinse with a small amount of water.
- **Large Spill:** Contain the spilled liquid with sand bags or dikes; transfer the liquid to a sealed HDPE/iron drum with an anti-static pump; label the drum with "Terpineol - flammable liquid" and dispose of it as hazardous chemical waste.
- Decontaminate the spill area with a small amount of detergent and water; dry the area thoroughly to eliminate residual vapor.

SECTION 7: Handling and Storage

7.1 Precautions for Safe Handling

- Operate in a **well-ventilated, cool and anti-static** workshop; install explosion-proof lighting and ventilation equipment; no open fire or smoking in the operation area.
- Use anti-static handling equipment (grounded drums, pumps and pipelines) to avoid static electricity accumulation and spark generation.
- Avoid direct contact with skin and eyes; avoid excessive inhalation of vapor; take regular breaks in large-scale continuous operation.
- **Hygiene Measures:** Wash hands thoroughly with soap and water after handling; do not touch food, drink or cosmetic products with contaminated hands; provide hand washing facilities in the operation area.

- Do not mix with strong oxidants (hydrogen peroxide, potassium permanganate), strong acids (HCl, H₂SO₄) and strong bases (NaOH, KOH) during handling to avoid chemical reactions.

7.2 Safe Storage Conditions

- **Temperature:** Store in a cool and dry warehouse at 0~30°C; avoid high temperature (>40°C) and direct sunlight; the storage area should be away from heat sources (boilers, heaters) and open fire.
- **Packaging:** Keep in the original sealed brown glass/HDPE/iron drum; ensure the container is airtight to prevent aroma volatilization, moisture absorption and oxidation; protect from light.
- **Incompatibilities:** Strong oxidants, strong acids, strong bases, highly flammable materials (gasoline, alcohol), oxidizing salts; no mixed storage with the above materials.
- **Storage Class:** Flammable liquid (low hazard), stored in the flammable chemical warehouse in accordance with GB 15603; separate from food, cosmetic and pharmaceutical raw materials with isolation measures.
- **Shelf Life:** 18 months (unopened, under specified storage conditions); use within 3 months after opening and seal tightly after each use.
- **Other:** The storage area should be equipped with CO₂/dry powder fire extinguishers and leak emergency treatment equipment; set up obvious "flammable goods" and "no smoking" warning signs.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

- **Occupational Exposure Limit (OEL):** No official national/international OEL for terpineol; refer to the OEL of terpene alcohols (TWA: 50 mg/m³, STEL: 100 mg/m³).
- **Biological Exposure Limit:** No specific biological exposure limit; monitor respiratory tract and skin condition for long-term operators.

8.2 Exposure Controls

- **Engineering Controls:** Install **explosion-proof forced ventilation system** in the operation area to keep the vapor concentration below the irritation limit; use closed pipelines and equipment for large-scale production to reduce vapor leakage.
- **Personal Protective Equipment (PPE):**
 - Eye/Face Protection: Chemical safety goggles (mandatory for large-scale handling); face shield for splash risk operations.
 - Skin Protection: Nitrile rubber gloves (thickness ≥0.18 mm), anti-static protective clothing, anti-static boots; avoid using latex gloves (poor resistance to organic solvents).
 - Respiratory Protection: Organic vapor filter gas mask (in poorly ventilated areas or large-scale spill); no respiratory protection required for normal open and well-ventilated operation.
 - Other: Anti-static wristband, hairnet and lab coat (for fine chemical/cosmetic grade production).
- **Environmental Exposure Control:** Collect the waste liquid and washing water in the operation area for centralized treatment; do not discharge directly into the environment; comply with local environmental protection discharge standards.

SECTION 9: Physical and Chemical Properties

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Property	Value
Physical State	Colorless to pale yellow clear liquid
Odor	Characteristic pleasant floral-pine aroma
Taste	Mild bitter-sweet taste (not for direct tasting)
Molecular Weight	154.25 g/mol (pure α-Terpineol)
Empirical Formula	C ₁₀ H ₁₈ O

Property	Value
Boiling Range	214 ~ 220°C at 101.3 kPa
Flash Point (Closed Cup)	89°C
Autoignition Temperature	280°C
Decomposition Temperature	>200°C (thermal decomposition, no hazardous by-products)
Relative Density (25/25°C)	0.930 ~ 0.940
Refractive Index (25°C)	1.475 ~ 1.485
Viscosity (25°C)	15 ~ 20 mPa·s
Water Solubility	Slightly soluble (≈0.1 g/100 mL at 25°C)
Solubility	Freely soluble in ethanol, ether, propylene glycol, vegetable oil and most organic solvents
Vapor Pressure (25°C)	0.02 kPa (negligible)
Relative Vapor Density (air=1)	5.3 (vapor)
Flammability	Combustible liquid (Category 4)
Explosive Properties	No explosion risk under normal conditions; no explosive limits available
Oxidizing Properties	None
Acid Value	≤1.0 mg KOH/g

SECTION 10: Stability and Reactivity

10.1 Chemical Stability

Stable under **recommended storage and use conditions (0~30°C, sealed, protected from light)**; no oxidation, degradation or color change; the aroma and purity remain unchanged for a long time. Slight oxidation may occur only under high temperature (>40°C) and long-term exposure to air, producing a small amount of terpene carboxylic acid (no toxic effects).

10.2-10.5 Reactivity Summary

- No hazardous chemical reactions under normal handling and storage conditions; no polymerization, hydrolysis or decomposition.
- **Conditions to Avoid:** High temperature (>40°C), direct strong sunlight, long-term exposure to air, open fire, static electricity, contact with strong oxidants/strong acids/strong bases.
- **Incompatible Materials:** Hydrogen peroxide, potassium permanganate, concentrated sulfuric acid, concentrated hydrochloric acid, sodium hydroxide, potassium hydroxide, oxidizing metal salts (Fe³⁺, Cu²⁺).
- **Hazardous Decomposition Products:** Only carbon monoxide and terpene hydrocarbon vapors are produced during thermal decomposition at >200°C; no toxic, corrosive or explosive decomposition products.
- **Hazardous Polymerization:** Will not polymerize under any normal or abnormal conditions; no polymerization risk even at high temperature.

SECTION 11: Toxicological Information

11.1 Key Toxicological Data

- **Acute Toxicity:**
 - Oral (Rat, LD50): >2000 mg/kg bw (low acute oral toxicity)
 - Dermal (Rabbit, LD50): >5000 mg/kg bw (no acute dermal toxicity)
 - Inhalation (Rat, LC50): >5000 mg/m³ (4h exposure, no acute inhalation toxicity)
- **Skin Corrosion/Irritation:** Mild reversible irritation (Rabbit, 4h exposure); no corrosion (GHS Category 4); slight dryness with prolonged contact.

- **Serious Eye Damage/Irritation:** Mild reversible conjunctivitis (Rabbit, 24h exposure); no corneal damage or permanent eye damage (GHS Category 4).
- **Respiratory Irritation:** Mild irritation to the upper respiratory tract when inhaled in high concentration vapor; no damage to the lower respiratory tract or lungs.
- **Sensitization:** No skin/respiratory sensitization (Guinea pig test); no allergic reaction in human skin patch test.
- **Carcinogenicity/Mutagenicity:** Not classified as carcinogenic by IARC, FDA or NTP; Ames test and chromosome aberration test are negative (no mutagenicity).
- **Reproductive Toxicity:** No teratogenic, embryonic or developmental toxicity in rat/mouse animal studies (oral/dermal exposure); no adverse effects on fertility.
- **Target Organ Toxicity:** No specific target organ toxicity for single/repeated exposure; only mild irritation to skin, eyes and respiratory tract.
- **Aspiration Hazard:** Low (high flash point, low vapor pressure, no aspiration risk under normal handling).

11.2 Additional Information

Toxicological properties of terpineol have been fully studied; it is a low-toxicity chemical raw material, and no toxic risks exist for professional standard handling and use in accordance with dosage requirements. The mild irritation is reversible and no long-term health effects are caused.

SECTION 12: Ecological Information

12.1 Ecotoxicity

- **Aquatic Organisms:** Slightly toxic to zebrafish (LC50, 96h: 200~500 mg/L); slightly toxic to daphnia (EC50, 48h: 150~300 mg/L); no toxic effects on algae (EC50, 72h: >1000 mg/L).
- **Terrestrial Organisms:** No toxic effects on soil bacteria, fungi and plants (1000 mg/kg soil); no inhibitory effect on soil enzyme activity.
- **Other Organisms:** No toxic effects on bees and silkworms (common pollinators and economic insects); safe for use in agricultural flavor additives.

12.2-12.7 Ecological Properties

- **Persistence/Degradability:** Fully biodegradable in aquatic and soil environments (BOD5/COD >0.6); 100% degraded into CO₂ and H₂O by microorganisms within 21 days, no persistent residues.
- **Bioaccumulative Potential:** Low bioaccumulation potential (log K_{ow}=3.3); cannot be absorbed and accumulated by aquatic/terrestrial organisms, BAF <10.
- **Mobility in Soil:** Low mobility; easily adsorbed by soil organic matter, no leaching into groundwater, no groundwater contamination risk.
- **PBT/vPvB Assessment:** Not classified as PBT/vPvB (biodegradable, low toxicity, low bioaccumulation).
- **Endocrine Disrupting Properties:** No endocrine disrupting effect (in vitro/in vivo animal tests are negative).
- **Other Adverse Effects:** Slightly toxic to aquatic organisms in high concentration; no long-term environmental pollution; the biodegradation products are non-toxic and have no adverse effects on the ecosystem.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- **Product Waste:** Spoiled or expired terpineol is classified as **flammable chemical hazardous waste**; send to licensed hazardous waste treatment facilities for high-temperature incineration (≥800°C) with flue gas purification system to avoid air pollution. Do not dump directly into the environment.



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- **Spill Waste:** The absorbent material containing terpineol is collected into a sealed chemical waste container and incinerated as hazardous waste; do not discard with household waste.
- **Washing Water/Waste Liquid:** Collect the washing water and production waste liquid in the operation area for centralized treatment (biological treatment + advanced oxidation); discharge only after reaching the local environmental protection discharge standards.
- **Packaging Waste:** Rinse the brown glass/HDPE/iron drum with a small amount of ethanol for 2~3 times; the rinsing liquid is collected for centralized treatment; the clean packaging can be recycled (glass/HDPE) or disposed of as non-hazardous waste (iron drum).

13.2 Disposal Regulations

Comply with China's **Hazardous Waste Pollution Control Law**, **Fire Protection Law** and **Environmental Protection Law**; comply with EU REACH (EC 1907/2006) and US TSCA disposal regulations; follow the local hazardous chemical waste disposal standards. Do not mix with household waste or non-hazardous industrial waste.

SECTION 14: Transport Information

14.1-14.6 Transport Details

- **UN Number:** 3271
- **UN Proper Shipping Name:** Terpineol; Alcohols, C10, aromatic
- **Transport Hazard Class:** 3 (Flammable liquids)
- **Packaging Group:** III (Minor hazard)
- **Marine Pollutant:** No (IMDG/IATA)
- **Transport Label:** Flammable liquid (Category 4), warning sign
- **Special Transport Requirements:**
 1. Transport by **closed anti-static chemical cargo vehicles**; no open transport or mixed transport with food, cosmetics and pharmaceuticals.
 2. Use shockproof, sealed and light-proof packaging; avoid package collision, leakage, direct sunlight and high temperature during transport; the transport temperature is controlled at 0~35°C.
 3. The transport vehicle is equipped with CO2/dry powder fire extinguishers, leak emergency treatment equipment and anti-static grounding device; no open fire or smoking during loading and unloading.
 4. Avoid transport with strong oxidants, strong acids, strong bases and highly flammable materials; the loading and unloading operation is carried out in a well-ventilated and cool area, and the equipment is grounded to eliminate static electricity.
 5. **IATA/IMDG Classification:** Flammable liquid (Category 3), Packaging Group III; non-restricted goods for air/sea transport, comply with IATA DGR and IMDG Code.

SECTION 15: Regulatory Information

15.1 National/International Regulations

- **China (NMPA/SEPA):** Hazardous Chemical Safety Management Regulation (Class 3 flammable liquid); GB/T 14454 (Fragrance Raw Material Standard); GB 7916 (Cosmetic Raw Material Safety Standard); Environmental Protection Law.
- **International (FDA/EMA/REACH):** US FDA (food/cosmetic grade raw material qualified); EU EMA (cosmetic raw material compliance); EU REACH (not listed in SVHC Candidate List); US TSCA (listed on TSCA Inventory); GHS Rev.9 (hazard classification).
- **Other Standards:** ISO 9001 (quality management); ISO 14001 (environmental management); IFRA (International Fragrance Association) usage standards.

15.2 Other Requirements

- Production and handling must comply with the national **Flammable and Explosive Hazardous Chemicals Safety Management Regulations**; the operation personnel must hold a chemical operation certificate.



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- Food/cosmetic grade terpineol must comply with the corresponding national additive dosage standards and GMP production requirements.
- All batch production records, test reports and COA must be retained for ≥ 5 years in accordance with chemical raw material regulatory requirements.
- The product label must be marked with product name, CAS number, hazard classification, storage conditions and emergency contact information in accordance with GHS standards.

SECTION 16: Other Information

- **MSDS Validity:** This MSDS is valid for 3 years from the revision date (18 FEB 2026) unless the product quality or hazard information changes.
- **Disclaimer:** This MSDS is based on current scientific and chemical industry knowledge, complying with GB/T 16483, GHS Rev.9 and international chemical raw material safety standards. The supplier is not liable for any damage caused by improper handling, non-compliance with storage/transport requirements, unauthorized use or failure to follow safety precautions.
- **Additional Technical Support:** For product formulation, dosage adjustment, compatibility test and hazard control scheme design for different application fields, contact the technical department at +86-021-50350029 ext. 841 (for licensed manufacturers and enterprises only).
- **Key Reminder:** This product is a flammable liquid raw material with mild irritation; strictly follow the fire prevention and personal protection requirements during handling and use. Food/cosmetic grade products must be used in accordance with the national additive dosage standards, and industrial grade products are not allowed to be used in food/cosmetic production.



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