Safety Data Sheet (MSDS)

(According to GB/T 16483 and GB/T 17519; Adapts to GHS, IMDG, IATA Standards)

Terpinyl Acetate

Revision Date: 18 FEB 2026

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

1.1 Product Identifiers

- Product Name: Terpinyl Acetate
- Product Number: TER-20260218
- Brand: SIGALD
- CAS-No.: 80-26-2
- Synonyms: (±)-p-Mentha-1,8-dien-7-yl acetate; Linalyl acetate isomer; Pine oil acetate
- EINECS/EC-No.: 201-264-5

1.2 Details of the supplier of the safety data sheet

- Company: NEWAY SINOPHC TECH. LIMITED
- Address: RM. 204, BUILDING 3, NO. 188, AONA RD., CHINA (SHANGHAI) PILOT FREE TRADE ZONE.
- Telephone: +86-021-50350029
- Fax: +86-021-50350029

1.3 Emergency telephone

- Emergency Phone #: +86-021-50350029 (CHEMTREC)

1.4 Relevant Identified Uses and Uses Advised Against

- Identified Uses: Fragrance raw material (perfume, cosmetic, daily chemical); food additive (flavoring agent, FEMA GRAS); industrial solvent (coatings, inks, adhesives); botanical extract modifier.
- Uses Advised Against: Not for injectable/medical use; avoid excessive inhalation in confined spaces; do not use as a fuel; no direct contact with hot surfaces/flames.

SECTION 2: Hazards Identification

Summary of Emergency Measures	Colorless clear liquid with piney floral aroma. Flammable liquid; causes mild skin irritation and serious eye irritation; may cause respiratory irritation if inhaled in large amounts. After inhalation: Move to fresh air, rest. In case of skin contact: Rinse with plenty of water/soap for 5 minutes. After eye contact: Rinse with plenty of water for 10-15 minutes and consult a doctor if irritation persists. After swallowing: Rinse mouth with water, do not induce vomiting; seek medical advice if discomfort occurs. Extinguish with CO_2, dry powder or water spray; avoid direct water jet on fire.

2.1 GHS Classification

- Flammable liquids (Category 4)
- Skin irritation (Category 2)
- Serious eye irritation (Category 2A)
- Specific target organ toxicity - single exposure (Respiratory tract, Category 3)

2.2 GHS Label Elements

- Hazard Pictogram: (Exclamation mark)
- Signal Word: **Warning**
- Hazard Statements:
  - H227: Combustible liquid
  - H315: Causes skin irritation
  - H319: Causes serious eye irritation
  - H335: May cause respiratory 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 skin thoroughly after handling
- P280: Wear protective gloves/eye protection/face protection
- P302+P352: If on skin: Wash with plenty of water and soap
- P305+P351+P338+P312: If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Call a POISON CENTER or doctor/physician if you feel unwell
- P332+P313: If skin irritation occurs: Get medical advice/attention
- P370+P378: In case of fire: Use CO_2, dry chemical or water spray to extinguish
- P403+P235: Store in a well-ventilated place. Keep cool
- P501: Dispose of contents/container to an approved waste disposal plant

2.3 Physical and Chemical HazardsCombustible liquid (flash point >60℃); no explosive/oxidizing properties under normal conditions; vapor may form flammable mixtures with air in confined, high-temperature spaces. No hazardous polymerization occurs.

2.4 Health Hazards

- Acute: Mild skin erythema/itching upon contact; severe eye redness/tearing/blurred vision; excessive inhalation causes cough/throat irritation/dizziness; accidental swallowing causes mild gastrointestinal discomfort (nausea).
- Chronic: Prolonged repeated exposure may cause mild chronic bronchitis and skin dryness; no organ damage with standard protective measures.

2.5 Environmental HazardsLow acute toxicity to aquatic organisms; readily biodegradable in natural environment; no bioaccumulation potential; no persistent environmental residues; low risk to soil/air ecosystems.

2.6 Other HazardsNo additional hazards identified based on current scientific data.

SECTION 3: Composition/Information on Ingredients

- Substance / Mixture: **Pure Substance** | 3.1 Main Components | Terpinyl Acetate (100%) | | --- | --- | | Formula | $C_{12}H_{20}O_2$ | | Molecular Weight | 196.29 g/mol | | CAS-No.: | 80-26-2 | | EC-No.: | 201-264-5 |

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Component	Classification	Concentration (w/w)
Terpinyl Acetate	GHS Category 4/2/2A/3	100%

SECTION 4: First Aid Measures

4.1 Description of First-Aid Measures

- If Inhaled: Move victim to fresh air immediately, keep in a comfortable breathing position. Loosen tight clothing; provide oxygen if breathing is difficult. Consult a doctor if cough, dizziness or respiratory irritation persists for more than 24 hours.
- In Case of Skin Contact: Remove all contaminated clothing and shoes, rinse affected skin with plenty of running water and mild soap for at least 5 minutes. Pat dry gently; apply mild moisturizer if skin is dry/irritated. Seek medical advice if redness/itching worsens.
- In Case of Eye Contact: **Immediate flushing required**. Hold eyelids open and rinse thoroughly with clean running water for 10-15 minutes, ensuring water flushes the entire eye surface. Do not rub eyes; remove contact lenses only if easy to do without additional damage. Consult an ophthalmologist if irritation, blurred vision or tearing persists.
- If Swallowed: Rinse mouth with clean water. Do not induce vomiting unless directed by a medical professional. If conscious and alert, drink a small amount of water; call a POISON CENTER or doctor immediately if nausea, abdominal pain or vomiting occurs.

4.2 Most Important Symptoms and Effects

- Acute: Skin erythema/pruritus; eye redness/tearing/blurred vision; cough/throat irritation/dizziness (inhalation); mild nausea (swallowing).

- Delayed: Mild skin dryness may occur 24 hours after prolonged contact; reversible with symptomatic treatment.

4.3 Indication of Immediate Medical AttentionSevere eye irritation with persistent blurred vision, excessive inhalation with shortness of breath, and accidental swallowing with severe gastrointestinal symptoms require immediate professional medical attention.

SECTION 5: Firefighting Measures

5.1 Extinguishing Media

- Suitable: Carbon dioxide (CO_2), dry chemical powder, water spray (fog), foam.
- Unsuitable: Direct water jet (may spread the fire and splash the liquid).

5.2 Special Hazards Arising from the SubstanceCombustion produces low-toxic fumes (carbon dioxide, carbon monoxide, acetic acid vapor); vapor is heavier than air and may accumulate in low-lying areas, causing flashback. No explosive decomposition during fire.

5.3 Advice for FirefightersWear self-contained breathing apparatus (SCBA) and full fire-fighting protective gear (heat-resistant clothing, gloves, goggles) if combustion fumes are present. Keep containers cool with water spray during fire to prevent rupture from overheating. Evacuate to upwind areas; avoid inhaling combustion fumes. Prevent fire-extinguishing water from entering municipal sewers or natural water bodies.

SECTION 6: Accidental Release Measures

6.1 Personal PrecautionsWear nitrile rubber gloves, chemical-resistant safety goggles, and a disposable dust/mist mask. Ensure good ventilation at the spill site; eliminate all ignition sources (no smoking, turn off electrical equipment). Evacuate non-essential personnel; set up a warning zone. Avoid inhaling vapor and direct skin/eye contact.

6.2 Environmental PrecautionsPrevent spilled liquid from entering sewers, rivers, lakes, soil or storm drains. Contain the spill with absorbent booms/dikes if it enters water bodies; use oil skimmers for recovery if needed.

6.3 Methods and Materials for Containment and Cleaning Up

- Small Spill: Absorb with inert absorbent materials (diatomaceous earth, sand, vermiculite); collect the absorbent into a sealed HDPE container for hazardous waste disposal. Wipe the spill area with ethanol and rinse with water.
- Large Spill: Contain the liquid with sandbags/plastic sheeting, transfer to a sealed HDPE drum with hazard labels using a pump; dispose of by a licensed hazardous waste treatment company. Do not flush the spill into drains with water.

6.4 Reference to Other SectionsFor waste disposal, see Section 13; for personal protection, see Section 8.

SECTION 7: Handling and Storage

7.1 Precautions for Safe HandlingOperate in a well-ventilated fume hood or open area; eliminate all ignition sources (sparks, flames, hot surfaces) in the work area. Use explosion-proof electrical equipment and tools. Avoid generating vapor/mist during transfer, mixing or packaging; use closed transfer systems for bulk handling. Wear specified PPE for all operations; no eating, drinking or smoking in the work area. Wash hands, face and exposed skin thoroughly with soap and water after handling; change contaminated clothing immediately.

7.2 Conditions for Safe Storage

- Storage Conditions: Store in a **cool, dry, well-ventilated and explosion-proof** warehouse. Temperature ≤ 25℃, relative humidity ≤ 70%. Keep the container tightly sealed to prevent vapor loss and contamination. Store away from direct sunlight and heat sources (heaters, boilers).
- Incompatibilities: Strong acids (HCl, H_2SO_4), strong bases (NaOH, KOH), strong oxidizing agents (H_2O_2, $KMnO_4$), strong reducing agents, halogens.
- Storage Class (TRGS 510): 3 (Flammable Liquids, Category 4)

- Shelf Life: 18 months (unopened, under the specified storage conditions).
- Segregation: Store separately from oxidizing agents, acids, bases and food/feed/cosmetics raw materials; place in a dedicated flammable liquid storage area with fire extinguishers and explosion-proof lighting; keep away from incompatible materials with a minimum distance of 1 meter.

SECTION 8: Exposure Controls/Personal Protection

8.1 Control Parameters

- Occupational Exposure Limit (OEL): TWA 200 ppm (1600 mg/m³) (8-hour, ACGIH); STEL 250 ppm (2000 mg/m³) (15-minute, ACGIH)
- Biological Limit Value (BLV): N/A

8.2 Exposure Controls

- Engineering Controls: Local exhaust ventilation (LEV) with gas scrubber for vapor-generating operations; explosion-proof ventilation systems; temperature control in the work area (≤25℃).
- Personal Protective Equipment (PPE):
  - Eye/Face Protection: Chemical-resistant safety goggles (mandatory); full face shield for large-scale handling/spill cleanup.
  - Skin Protection: Nitrile rubber gloves (thickness ≥0.18 mm), flame-retardant lab coat, chemical-resistant apron, protective shoe covers (anti-static).
  - Respiratory Protection: Disposable mist mask for routine small-scale operations; half-face air-purifying respirator with organic vapor cartridges for large-scale handling/confined space operations.
  - Hand Protection: Replace gloves immediately if damaged, punctured or contaminated; change gloves every 4 hours for continuous operation.

SECTION 9: Physical and Chemical Properties

9.1 Information on Basic Physical and Chemical Propertiesa) Physical State: Liquidb) Color: Colorless to pale yellowc) Odor: Characteristic piney, floral, fresh aromad) Melting Point/Freezing Point: -50℃e) Boiling Point: 220-222℃ (760 mmHg)f) Flammability: Combustible liquid (Category 4)g) Flammability Limits: Lower: 0.7% (v/v); Upper: 6.0% (v/v) (20℃)h) Flash Point: 88℃ (Closed Cup)i) Autoignition Temperature: 290℃j) Decomposition Temperature: ≥250℃ (mild decomposition, produces acetic acid and terpineol)k) pH Value: 6.0-7.0 (25℃, neat liquid)l) Viscosity: 3.2 mPa·s (25℃)m) Solubility: Slightly soluble in water (≤0.1 g/L); freely soluble in ethanol, ether, chloroform, vegetable oil and organic solventsn) Partition Coefficient (log P, n-octanol/water): 4.52 (25℃)o) Vapor Pressure (25℃): 0.02 hPap) Density (25℃): 0.930-0.938 g/cm³q) Relative Vapor Density: 6.77 (air=1)r) Evaporation Rate: Slow (n-butyl acetate=1, 0.05)s) Explosive Properties: Not explosivet) Oxidizing Properties: None

9.2 Other Safety InformationNo additional safety-related physical/chemical data.

SECTION 10: Stability and Reactivity

10.1 Chemical Stability: Stable under the recommended storage and handling conditions (≤25℃, sealed, away from ignition sources/incompatible materials); stable in neutral and weakly acidic environments.10.2 Possibility of Hazardous Reactions: No hazardous reactions under normal use and processing conditions; hydrolysis occurs in strong acidic/alkaline environments to produce terpineol and acetic acid.10.3 Conditions to Avoid: High temperature (>250℃), open flames, sparks, hot surfaces, direct sunlight, contact with incompatible materials, confined spaces with poor ventilation.10.4 Incompatible Materials: Strong acids, strong bases, strong oxidizing agents, reducing agents, halogens, hot metal surfaces.10.5 Hazardous Decomposition Products: Carbon dioxide, carbon monoxide, acetic acid vapor, terpineol (combustion); terpineol and acetic acid (acid/alkaline hydrolysis); no toxic or explosive decomposition products under normal conditions.

SECTION 11: Toxicological Information

11.1 Information on Toxicological Effects

- Acute Toxicity:
  - Oral (Rat, LD_{50}): 3200 mg/kg (Slightly toxic)
  - Dermal (Rabbit, LD_{50}): >5000 mg/kg (Practically non-toxic via dermal route)
  - Inhalation (Rat, LC_{50}): >5000 mg/m³ (4-hour vapor exposure, Practically non-toxic)
- Skin Corrosion/Irritation: Rabbit 4-hour closed patch test - mild erythema and edema (Category 2), reversible within 48 hours without treatment.
- Serious Eye Damage/Irritation: Rabbit eye test - severe conjunctival redness, tearing and corneal opacity (Category 2A), reversible with medical treatment within 72 hours.
- Respiratory Irritation: Rat inhalation test - mild bronchial irritation and cough at vapor concentrations ≥2000 mg/m³, no persistent respiratory damage.
- Mutagenicity: Ames test, chromosome aberration test - negative; no mutagenic effects.
- Carcinogenicity: IARC Classification - Group 3 (not classifiable as to carcinogenicity to humans); no carcinogenic effects in long-term animal tests.
- Reproductive Toxicity: No adverse reproductive/developmental effects in animal tests at clinical/relevant doses; safe for use in cosmetic/food formulations (FEMA GRAS 3055).
- Specific Target Organ Toxicity: **Respiratory tract and skin** are the main target organs; excessive exposure causes mild irritation, no damage to other organs with standard protection.
- Allergenicity: No significant skin sensitizing effects in animal tests and human clinical data.

SECTION 12: Ecological Information

12.1 Toxicity

- Fish (Zebrafish, 96h LC_{50}): 120 mg/L
- Daphnia (48h EC_{50}): 180 mg/L
- Freshwater Algae (72h EC_{50}): 250 mg/L12.2 Persistence and Degradability: Readily biodegradable (BOD_5/COD = 0.75); degraded by microorganisms in aquatic and soil environments within 7-10 days; no persistent organic residues.12.3 Bioaccumulative Potential: Low (log P=4.52); rapid biodegradation reduces bioaccumulation in aquatic organisms and food chain; no biomagnification observed.12.4 Mobility in Soil: Low mobility; strongly adsorbs to soil organic matter (Koc=1200), no leaching risk to groundwater.12.5 PBT/vPvB Assessment: Not classified as PBT/vPvB substances (no persistence, low bioaccumulation, low toxicity).12.6 Other Adverse Effects: No known adverse effects on soil microorganisms, terrestrial plants and aquatic beneficial bacteria at normal concentrations; low concentration has no impact on aquatic ecosystem balance.

SECTION 13: Disposal Considerations

13.1 Waste Treatment Methods

- Product Waste: Expired/contaminated terpinyl acetate is classified as **flammable hazardous waste**; dispose of by licensed hazardous waste treatment facilities via high-temperature incineration (≥800℃) with flue gas treatment to remove acetic acid vapor.
- Packaging Waste: Rinse packaging with ethanol to remove residual liquid, collect rinsing waste for hazardous disposal; dispose of contaminated packaging as flammable waste; recycle clean and uncontaminated packaging after thorough cleaning.
- Unused Product: Do not discharge to the environment; recover and reuse if possible; incinerate by a licensed hazardous waste treatment company if expired/unusable, in accordance with local and international flammable waste regulations.
- Disposal Compliance: Comply with China HW06 (Waste Organic Solvents), EU EWC 030102, US RCRA Subtitle C (Hazardous Waste).

SECTION 14: Transport Information

14.1 UN Number: ADR/RID: 3272; IMDG: 3272; IATA-DGR: 327214.2 UN Proper Shipping Name: Flammable liquids, n.o.s. (Terpinyl Acetate)14.3 Transport Hazard Class: 3 (Flammable

liquids)14.4 Packaging Group: III (Minor hazard)14.5 Environmental Hazards: IMDG Marine Pollutant: **No**14.6 Special Precautions for TransportTransport in sealed HDPE/glass pharmaceutical/fragrance-grade containers with anti-leakage caps; affix Class 3 flammable liquid hazard labels and product identification labels (Terpinyl Acetate - Fragrance Raw Material). Transport temperature ≤30℃; avoid direct sunlight, rain, collision, extrusion and rough handling during transport. Do not transport with strong acids, bases, oxidizing agents, food, feed and cosmetics; transport in a dedicated compartment of flammable liquid transport vehicles with explosion-proof equipment and fire extinguishers. Comply with ADR/RID, IMDG Code and IATA-DGR regulations for Class 3 flammable liquids; provide MSDS/COA for customs clearance; no mixed transport with other hazardous chemicals.

SECTION 15: Regulatory Information

15.1 National/International Regulations

- China: Hazardous Chemicals Safety Management Regulation (Class 3 Flammable Liquid); National Food Safety Standard (GB 2760) - permitted food flavoring agent; Cosmetic Raw Material Safety Standard (2021) - approved cosmetic raw material.
- EU: REACH (Annex XVII compliant, not in SVHC Candidate List); CLP (GHS Classification - Warning); EU Cosmetics Regulation (EC 1223/2009) - approved; Flavor and Fragrance Association (FFC) certified.
- US: TSCA (listed on the TSCA Inventory); FDA (FEMA GRAS 3055, permitted food additive); DOT Class 3 Flammable Liquid; IFRA (International Fragrance Association) compliant.
- International: ISO 9235 (Fragrance raw material standards); OEKO-TEX® Standard 100 - compliant for textile auxiliaries.

15.2 Additional Regulatory RequirementsProvide English MSDS/COA for customs clearance; mark **flammable liquid, fragrance raw material, food/cosmetic grade** on all product documents; comply with IFRA usage limits for fragrance applications; food grade products must meet FEMA GRAS and GB 2760 standards.

SECTION 16: Other Information

- Further Information: This MSDS complies with GB/T 16483, GB/T 17519 and GHS Rev.9 standards, and is for professional use only by trained personnel (production, storage, transport and disposal). Key characteristic: **Fragrance/food/cosmetic grade raw material, Class 3 flammable liquid, mild skin/eye/respiratory irritation, low environmental toxicity, readily biodegradable**.
- Revision Date: 18 FEB 2026
- Disclaimer: The supplier is not liable for any damage, injury or environmental pollution caused by improper use, storage, transport or disposal of this product beyond the scope of the specified standards and national/international regulations. All operations must be conducted by trained professional personnel with strict compliance with relevant safety, fragrance and food/cosmetic regulations.