

Technical Data Sheet (TDS)

- Oak Moss Extracts

Product Name: Oak Moss Extracts **English Name:** Oak Moss Extracts **CAS Number:** 90028-68-5 **MDL Number:** MFCD00148210 **Main Components:** Total Lichen Acid ($\geq 8.0\%$), Evernic acid, Usnic acid **Molecular Weight:** Variable (natural complex mixture) **Revision Date:** 27 FEB 2026

1. Product Overview

SIGALD Oak Moss Extracts is a premium natural extract obtained by solvent extraction of *Evernia prunastri* (oak moss lichen) growing on oak trees, followed by vacuum solvent removal and purification. It features a distinctive earthy, mossy and woody aromatic scent with subtle floral undertones, and is a classic fixative and fragrance modifier in the perfume industry. With a total lichen acid content of 9.5%, our product retains the natural active components and unique fragrance of oak moss, and is produced under GMP conditions with no artificial additives or solvent residues (residual solvent $< 50\text{ppm}$). Compliant with IFRA and EU Cosmetics Regulation, it is widely used in high-end fragrance and cosmetic formulation with proper dilution.

Core Characteristics:

- Natural lichen-sourced extract with typical mossy-woody aroma; excellent fragrance fixative performance.
- Total lichen acid $\geq 8.0\%$ (typical 9.5%), high purity and stable quality.
- Soluble in organic solvents and fixed oils, ideal for fragrance and cosmetic systems.
- Compliant with global fragrance/cosmetic standards (with skin sensitization use restrictions).
- 24-month shelf life under specified storage conditions (nitrogen-filled packaging).

2. Technical Specifications (Complies with Industrial Standard)

| Item | Specification | Test Method |
|----------------------------|--|--------------------------|
| Appearance | Olive green to brown viscous liquid/paste | Visual Inspection |
| Odor | Characteristic earthy, mossy, woody aroma | Sensory Evaluation |
| Total Lichen Acid Content | $\geq 8.0\%$ (Typical:9.5%) | HPLC |
| Relative Density (20/20°C) | 1.020-1.060 | Pycnometer Method |
| Refractive Index (20°C) | 1.5100-1.5300 | Abbe Refractometer |
| Acid Value | 20.0-40.0 mg KOH/g | Titrimetric Method |
| Water Content | $\leq 1.0\%$ | Karl Fischer Titration |
| Heavy Metals (Pb) | $\leq 5\text{ ppm}$ | AAS |
| Heavy Metals (As) | $\leq 1\text{ ppm}$ | AFS |
| Ethanol Insoluble Matter | $\leq 2.0\%$ | Gravimetric Method |
| Solubility in 95% Ethanol | 1:3 soluble (25°C) | Visual Inspection |
| Viscosity (25°C) | 150-300 mPa·s | Rotational Viscometer |
| Microbial Count | Total Plate Count $\leq 100\text{ CFU/g}$ | Microbiological Test |
| Fragrance Retention | $\geq 90\%$ after 12 months storage (specified conditions) | Sensory & GC |

3. Product Advantages

- Natural & Authentic Fragrance:** Extracted from natural oak moss lichen, retains the unique earthy-mossy-woody aroma, no synthetic fragrance additives, ideal for high-end fragrance formulation.
- Excellent Fragrance Fixative:** Slow volatilization rate, prolongs fragrance retention time of finished products, reduces reapplication frequency, core raw material for perfume fixative.
- Versatile Fragrance Modifier:** Blends well with floral, woody, citrus and oriental fragrance systems, softens sharp notes and enriches fragrance layers.
- Stable Physical & Chemical Properties:** Resistant to moderate temperature ($\leq 60^{\circ}\text{C}$), stable under normal formulation and storage conditions, no significant fragrance loss.
- Compliant & Traceable:** Meets IFRA fragrance use standards and EU cosmetic regulations, full production traceability, each batch with COA test report.
- Multiple Applications:** Not only for fragrance, but also for scented cosmetics, natural dyes and flavoring auxiliaries, with high added value.

4. Application Fields & Recommended Dosage

Mandatory dilution required for all applications; skin patch test recommended for cosmetic formulation; maximum usage limit strictly follows IFRA standards.

表格

| Industry | Application Scenario | Recommended Dosage (%) | Note |
|------------------------|--|------------------------|---|
| Fine Fragrance | Perfume, cologne, aftershave, parfum | 0.5-5.0 | IFRA limit: $\leq 5.0\%$; acts as fixative/modifier |
| Cosmetics | Scented lotion, shampoo, body wash, soap | 0.1-1.0 | Dilute in base oil/solvent first; avoid direct skin contact |
| Household Fragrance | Candle, air freshener, reed diffuser | 0.3-3.0 | Blend with other fragrance raw materials |
| Fragrance Raw Material | Fragrance concentrate, perfume base | 1.0-10.0 | Used as middle/top note modifier |
| Other | Natural dye, flavoring auxiliary | 0.05-0.5 | Non-food grade; only for flavoring auxiliary |

5. Usage Guidelines & Processing

5.1 Solubility & Incorporation

- Solubility:** Insoluble in water; soluble in 95% ethanol, propylene glycol, vegetable oil (jojoba/sunflower) and organic solvents (ether/ethyl acetate).
- Pre-dilution:** Must pre-dissolve in cosolvent (95% ethanol/propylene glycol, 1:5 ratio) before adding to aqueous cosmetic formulations to avoid phase separation.
- Temperature Control:** Stable at $\leq 60^{\circ}\text{C}$; add at the final cooling stage ($\leq 40^{\circ}\text{C}$) of formulation to preserve maximum fragrance activity; avoid high-temperature sterilization ($> 80^{\circ}\text{C}$).
- Viscosity Handling:** Warm the extract to $30-40^{\circ}\text{C}$ to reduce viscosity for easier mixing and measuring (no fragrance loss at this temperature).

5.2 Compatibility & Stability

- Compatible With:** Most fragrance raw materials (floral/woody/citrus), cosmetic base oils, emulsifiers and waxes.
- Incompatible With:** Strong oxidizing agents, strong alkalis ($\text{pH} > 9.0$), heavy metal salts and organic amines (avoid mixing to prevent fragrance degradation).



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>

- **pH Range:** Suitable for acidic to neutral formulations (pH 3.0-7.0); fragrance activity decreases in alkaline environment (pH>8.0).

5.3 Safety Note

1. Due to skin sensitization risk, **no undiluted direct skin contact**; perform skin patch test on 20+ volunteers before large-scale cosmetic production.
2. Strictly follow IFRA maximum usage limit; do not use in infant (0-3 years) and sensitive skin products.
3. Avoid oral consumption; the product is for external use only (fragrance/cosmetic).

6. Packaging & Storage

6.1 Packaging Specifications

表格

| Grade | Packaging | Application |
|------------|---|--------------------------------------|
| Sample | 10g/30g Amber Glass Jars | Formulation testing/trial use |
| Commercial | 100g/500g/1kg Amber Glass Jars/Tins | Small-batch production/fragrance lab |
| Bulk | 5kg/25kg Light-proof HDPE Drums (nitrogen-filled) | Industrial large-scale production |
| Custom | Customized packaging (50g-10kg) | According to customer requirements |

6.2 Storage Conditions

- **Storage Environment:** Store in a cool, dark, well-ventilated warehouse at 5-25°C; avoid direct sunlight, high temperature (>30°C) and humid environment (relative humidity ≤60%).
- **Sealing Requirement:** Keep container tightly closed with teflon stopper at all times; minimize air exposure to prevent oxidation and color darkening.
- **Segregation Storage:** Store separately from strong oxidants, strong alkalis, heavy metal salts and food raw materials; distance from incompatible materials ≥1m.
- **Shelf Life:**
 - Unopened: 24 months from manufacture (nitrogen-filled HDPE drums); 18 months (glass jars).
 - Opened: 6 months (store in refrigerator at 5-10°C, tightly sealed); use as soon as possible.
- **Note:** Slight color darkening (olive green to brown) after long-term storage is a natural oxidation phenomenon, no loss of fragrance activity and can be used normally.

6.3 Transportation

- Non-dangerous goods; transport by ordinary closed vehicles, avoid open-air transportation.
- Transport temperature: 5-30°C; avoid direct sunlight, high temperature, collision and extrusion during transport to prevent packaging damage and leakage.
- Segregate transport: Do not mix with strong oxidants, strong alkalis, food and medical products during transport.
- Loading/unloading: Load and unload gently with professional equipment; no rough handling to avoid packaging breakage.

7. Safety & Protection

1. The product is a skin sensitizer and eye irritant; wear **nitrile rubber gloves (≥0.11mm)**, **chemical safety goggles** and **face shield** during handling; avoid latex gloves and direct skin/eye contact.
2. Operate in a well-ventilated area; prohibit smoking, eating and drinking in the operation area; wash hands thoroughly with soap and water after handling.
3. In case of skin contact: Wash with plenty of soap and water for 10-15 minutes; if rash/itching occurs, stop contact and seek medical advice immediately.



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>

4. In case of eye contact: Rinse with plenty of running water for 15-20 minutes; call a physician immediately if irritation persists.
5. If accidentally ingested: Rinse mouth with water, do not induce vomiting; call a poison center/physician immediately.
6. For large-scale operation, install local exhaust ventilation and emergency eye wash/hand wash facilities in the workplace; prepare first-aid kit nearby.

8. Quality Assurance & Regulatory Compliance

1. **Manufacturing Standard:** Produced in ISO 9001 and ISO 14001 certified facilities, complying with GMP for natural plant extracts; solvent extraction uses food-grade ethanol, residual solvent <50ppm.
2. **Regulatory Compliance:**
 - IFRA: Compliant with International Fragrance Association standards (maximum usage limit for fragrance).
 - EU: REACH registered, compliant with EC 1223/2009 (Cosmetics Regulation) and EC 1334/2008 (Fragrance Regulation).
 - US: TSCA listed, FDA compliant for fragrance/cosmetic use (21 CFR).
 - China: Compliant with Cosmetic Safety Technical Specification (2015), with use restrictions for skin sensitization.
3. **Quality Testing:** Each batch of product is strictly tested by HPLC, AAS, GC and microbiological methods; accompanied by a **Certificate of Analysis (COA)** to ensure compliance with industrial standards.
4. **Technical Support:** Provide one-stop technical support including formulation guidance, dosage optimization, compatibility testing and fragrance blending; 24h online technical consultation.

9. Supplier Information

- **Supplier:** 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
- **After-sales Service:** 24h technical support for application and formulation; free sample testing; product replacement for unqualified batches (confirmed by third-party testing).
- **Delivery:** Fast global delivery with professional logistics partners; provide compliant transport documentation and product testing reports for international shipping.