

Technical Data Sheet (TDS)

1. Product Overview

Product Name: Phylloquinone (Vitamin K1) **English Name:** Phylloquinone **CAS Number:** 84-80-0 **Formula:** C₃₁H₄₆O₂ **Molecular Weight:** 450.69 g/mol **Product Characteristics:** Natural fat-soluble vitamin, pale yellow to yellow oily liquid with a slight characteristic odor. It is an essential nutrient for the human body, involved in the synthesis of blood coagulation factors, and also has antioxidant and anti-inflammatory effects. Stable under normal storage conditions, sensitive to light and high temperature.

2. Technical Specifications

Assay: ≥98.0%; Appearance: Pale yellow to yellow oily liquid; Melting Point: -20 ~ -15°C; Boiling Point: >300°C (decomposes); Solubility: Soluble in ethanol, ether, chloroform, insoluble in water; Loss on Drying: ≤0.5%; Residue on Ignition: ≤0.1%; Heavy Metals (Pb): ≤10 ppm; Heavy Metals (As): ≤2 ppm; Related Substances: ≤1.0%.

3. Product Advantages

1. High Purity: Assay ≥98.0%, low content of related substances and impurities, meeting industrial and pharmaceutical grade basic requirements.
2. Natural Property: Can be derived from natural plant sources, in line with the demand for natural raw materials.
3. Stable Efficacy: Retains effective biological activity under recommended storage conditions, with reliable performance.
4. Versatile Compatibility: Good solubility in organic solvents, compatible with most fat-soluble raw material systems.

4. Application Fields

1. Pharmaceutical Industry: Raw material for blood coagulation drugs, nutritional supplements for vitamin K1 deficiency.
2. Food Industry: Food fortifier, added to dairy products, vegetable oils, health foods to supplement vitamin K1.
3. Cosmetic Industry: Antioxidant ingredient in skin care products, anti-aging and anti-inflammatory, improving skin barrier function.
4. Feed Industry: Feed additive for livestock and poultry, promoting animal blood coagulation and bone development.

5. Usage Methods

1. Pharmaceutical Use: Formulated into tablets, injections, capsules according to pharmaceutical preparation processes, with dosage following national pharmacopoeia standards.



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2. Food Fortification: Added in the production process of food, addition amount 0.01~0.1 mg/100g (adjust according to national food fortification standards).
3. Cosmetic Application: Added to cream, lotion, serum, addition amount 0.05~0.5% (w/w), mixed evenly in the oil phase during preparation.
4. Feed Addition: Diluted with vegetable oil and added to feed, addition amount 0.1~0.5 mg/kg of feed, mixed uniformly.

6. Packaging & Storage

1. Packaging Specifications: 100mL brown glass bottle, 500mL brown glass bottle, 1L brown glass bottle, 5L brown glass drum (custom packaging available upon request).
2. Storage Conditions: Store in a cool, dark, sealed warehouse, temperature $\leq 25^{\circ}\text{C}$, avoid direct sunlight and high temperature ($\geq 60^{\circ}\text{C}$). Keep away from oxidizing agents and strong acids/bases.
3. Shelf Life: 24 months (unopened, under specified storage conditions).
4. Transportation: Classified as non-hazardous goods for transportation, use sealed brown glass packaging, avoid collision, sunlight exposure and high temperature during transportation.

7. Safety & Protection

1. The product is a non-toxic nutrient, but avoid direct contact with eyes and mucous membranes in large quantities.
2. Wear nitrile rubber gloves and safety glasses during large-scale handling and preparation operations.
3. In case of eye contact, rinse thoroughly with plenty of running water for 5~10 minutes; consult a doctor if irritation persists.
4. Avoid ingestion in large quantities; if accidentally swallowed in large amounts, rinse mouth with water and seek medical advice if discomfort occurs.

8. Quality Assurance

1. The product is manufactured in accordance with ISO 9001 quality management system standards, with complete production and testing records.
2. Each batch of product is tested by professional laboratories and accompanied by a Certificate of Analysis (COA) to ensure compliance with standards.
3. Provide one-stop technical support, including product application formula design, dosage adjustment and quality control guidance.