

Technical Data Sheet (TDS)

1. Product Overview

- **Product Name:** Artemether (蒿甲醚)
- **CAS Number:** 71963-77-4
- **Formula:** C₁₆ H₂₆ O₅
- **Formula Weight:** 298.37 g/mol
- **Product Characteristics:** High-purity semi-synthetic artemisinin derivative, core anti-malarial pharmaceutical raw material with high anti-parasitic activity and good bioavailability. White crystalline powder, soluble in organic solvents, non-toxic at therapeutic dosages, fully biodegradable. Pharmaceutical grade meets CP/USP/EP standards, stable under recommended storage conditions, widely used in anti-malarial drug production and biomedical research.

2. Technical Specifications (CP/USP/EP Compliant)

Item	Specification (Pharmaceutical Grade)
Appearance	White to off-white crystalline powder, almost odorless
Assay (Purity)	≥ 99.0% (HPLC)
Loss on Drying	≤ 0.5% (105°C, 2h)
Residue on Ignition	≤ 0.1% (600°C±50°C)
Heavy Metals (Pb)	≤ 5 ppm
Heavy Metals (As)	≤ 1 ppm
Heavy Metals (Hg)	≤ 0.1 ppm
Melting Point	86-90°C
Specific Rotation (25°C, CHCl ₃ , 1%)	+168° to +178°
Related Substances	≤ 0.8% (HPLC)
Residual Solvents	Meets USP <467> limits
Microbial Limit	Total Aerobic Count ≤100 CFU/g; Yeast/Mold ≤10 CFU/g
Pathogens	E. coli, Salmonella, Staphylococcus aureus: Negative
Solubility	Soluble in chloroform (1g/3mL); insoluble in water
Particle Size	100-200 mesh (standard); customizable 80-300 mesh
Temperature Stability	Stable at 0-30°C (purity retention ≥99%)
Light Stability	Stable in dark; slight degradation under strong UV light

3. Product Advantages

1. **High Purity & Quality:** ≥99.0% assay, meets international pharmacopoeial standards, low impurity/heavy metal content, consistent batch quality
2. **Potent Biological Activity:** Strong anti-malarial activity, high bioavailability, core raw material for artemisinin combination therapies (ACTs)
3. **Good Solubility:** Soluble in common organic solvents (chloroform/ethanol/acetone), easy for pharmaceutical formulation and synthesis
4. **Safety & Low Toxicity:** No systemic toxicity at therapeutic dosages, no serious side effects, suitable for clinical and veterinary use
5. **Stability:** Good storage stability (24 months) under cool/dry conditions, better stability than artemisinin
6. **Eco-friendly:** Fully biodegradable, no environmental pollution, compliant with global green chemical standards
7. **Versatility:** Widely used in anti-malarial drug production, biomedical research and fine chemical synthesis

4. Application Fields

- **Pharmaceutical Industry:** Core raw material for anti-malarial drugs (tablets, injections, capsules); production of artemisinin combination therapies (ACTs)
- **Biomedical Research:** Research reagent for anti-malarial, anti-parasitic and anti-cancer mechanism studies



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- **Veterinary Medicine:** Anti-parasitic drug raw material for livestock/poultry aquaculture (anti-malaria/anti-coccidiosis)
- **Fine Chemicals:** Intermediate for synthesis of novel artemisinin derivatives with enhanced biological activity
- **Cosmetics:** High-end skin care additive (antioxidant/anti-aging) in low concentration for serums/creams

5. Usage Methods

- **Pharmaceutical Formulation:** Used to produce anti-malarial tablets/capsules/injections; formulated with excipients (lactose/starch) for oral preparations, dissolved in vegetable oil for injectable formulations (dosage per pharmacopoeia/therapeutic guidelines)
- **Research Use:** 0.01-5 mM concentration for in vitro cell experiments; dissolve in DMSO/chloroform to prepare stock solution
- **Veterinary Medicine:** 5-20 mg/kg body weight for livestock/poultry; formulate into oral powder/suspension
- **Chemical Synthesis:** Used as intermediate for novel artemisinin derivative synthesis; reaction temperature 20-80°C, dissolve in organic solvent as reaction medium
- **Note:** Raw powder not for direct use; must be formulated into finished products for medical/veterinary/cosmetic application

6. Packaging & Storage

Packaging Specifications

- 100 g/bottle (pharmaceutical grade, amber glass bottle with PE liner)
- 1 kg/tin (pharmaceutical/industrial grade, sealed tin can with PE liner)
- 5 kg/drum (industrial grade, HDPE drum with airtight seal)
- 25 kg/drum (bulk industrial grade, paper drum with aluminum foil liner)
- Custom packaging (10g/50g) for research/small-batch orders

Storage Conditions

- Store in a **cool, dry, dark** warehouse with temperature $\leq 20^{\circ}\text{C}$ and relative humidity $\leq 50\%$
- Keep container **airtight and sealed** to prevent moisture absorption and light degradation
- Store separately from strong acids, oxidizing agents, heavy metal salts and UV light
- Avoid high temperature ($>30^{\circ}\text{C}$) and repeated freeze-thaw cycles

Shelf Life

- 24 months (unopened, pharmaceutical grade, under specified storage conditions)
- 18 months (unopened, industrial grade, under specified storage conditions)
- 6 months after opening (if sealed and stored properly at 4°C for research use)

7. Safety & Protection

- The product is non-hazardous; mild eye/skin irritation may occur in sensitive individuals
- **Mandatory PPE** for handling: anti-dust safety goggles, nitrile rubber gloves, N95 dust mask (for large-scale/dust-generating operation)
- Avoid dust inhalation and direct eye/skin contact; wash hands thoroughly with soap and water after handling
- In case of eye contact, rinse with plenty of running water for 10-15 minutes; consult a doctor if irritation persists
- Do not ingest raw powder; if large amount is ingested, consult a doctor immediately
- Non-combustible; no special fire/explosion protection required in storage/handling

8. Quality Assurance

- Manufactured in accordance with **GMP (Good Manufacturing Practice)**, **ISO 9001 (Quality)** and **ISO 14001 (Environment)** standards
- Each batch is tested by an independent third-party laboratory and accompanied by a **Certificate of Analysis (COA)**
- Provide **pharmacopoeial compliance documents** (CP/USP/EP) for pharmaceutical grade products
- Standardized semi-synthesis and purification process, low batch-to-batch variation, stable product quality