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Technical Data Sheet (TDS)

1. Product Overview

- **Product Name**: Deoxyartemisinin
- **CAS Number**: 72826-63-2
- **Formula**: $C_{15}H_{22}O_4$
- **Formula Weight**: 266.33 g/mol
- **Product Characteristics**: High-purity artemisinin derivative and key fine chemical intermediate, white crystalline powder with good solubility in organic solvents. It is a critical raw material for the synthesis of artemisinin series anti-malarial drugs and derivatives, with stable chemical properties under recommended storage conditions. Non-toxic, fully biodegradable, and widely used in pharmaceutical R&D and fine chemical synthesis.

2. Technical Specifications (Industrial/Research Standard)

Item	Specification
Appearance	White to pale yellow crystalline powder, faint characteristic odor
Assay (Purity)	≥ 98.5% (HPLC)
Loss on Drying	≤ 0.8% (105℃, 2 hours)
Residue on Ignition	≤ 0.1% (600℃±50℃)
Heavy Metals (Pb)	≤ 5 ppm
Heavy Metals (As)	≤ 1 ppm
Melting Point	138-143℃
Specific Rotation (25℃, CHCl3, 1%)	+65° to +75°
Related Substances	≤ 1.0% (HPLC)
Residual Solvents	Meets USP <467> limits
Microbial Limit	Total Aerobic Count ≤200 CFU/g; Yeast/Mold ≤20 CFU/g
Pathogens	E. coli, Salmonella: Negative
Solubility	Soluble in chloroform (1g/4mL); slightly soluble in ethanol; insoluble in water
Particle Size	80-200 mesh (standard); customizable 60-300 mesh
Temperature Stability	Stable at 0-30℃ (purity retention ≥98%)
Light Stability	Stable in dark condition; slight degradation under strong UV light

3. Product Advantages

1. **High Purity**: ≥98.5% assay, low impurity/heavy metal content, consistent batch quality for industrial/research use
2. **Excellent Solubility**: Soluble in common organic solvents (chloroform/acetone), easy for chemical synthesis and formulation
3. **Stable Properties**: Good chemical stability under cool/dry storage conditions, 24-month long shelf life
4. **Key Intermediate**: Core raw material for artemisinin derivative synthesis (artemether, artesunate) and anti-malarial drug R&D
5. **Safety**: Non-toxic, no systemic toxicity, only mild eye/skin irritation in sensitive individuals
6. **Eco-friendly**: Fully biodegradable, no environmental pollution, compliant with global green chemical standards
7. **Customization**: Editable particle size for different application scenarios (synthesis/research)

4. Application Fields

- **Fine Chemical Synthesis**: Key intermediate for the synthesis of artemisinin series derivatives (artemether, artesunate, dihydroartemisinin)
- **Pharmaceutical R&D**: Research reagent for anti-malarial, anti-parasitic and anti-cancer drug development

- **Biomedical Research**: Reagent for studying the mechanism of artemisinin and its derivatives in anti-tumor/anti-inflammatory activities
- **Chemical Research**: Raw material for organic synthesis and heterocyclic compound research
- **Veterinary Drug R&D**: Intermediate for the development of livestock/poultry anti-parasitic veterinary drugs

5. Usage Methods

- **Chemical Synthesis**: Used as a key intermediate for artemisinin derivative synthesis; reaction temperature 20-80℃, dissolve in chloroform/acetone as reaction solvent (dosage per synthesis process)
- **Research Use**: 0.01-10 mM concentration for in vitro cell/chemical experiments; dissolve in DMSO/chloroform to prepare stock solution
- **Lab Scale Experiment**: 1-5 g per reaction batch (adjust according to experimental design); store prepared solution at 4℃ for short-term use
- **Note**: For industrial synthesis, optimize dosage and reaction conditions according to production process; avoid direct contact with reaction raw materials (strong acids/oxidizers)

6. Packaging & Storage

Packaging Specifications

- 100 g/bottle (research grade, amber glass bottle with PE liner)
- 1 kg/tin (industrial/research 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 small-batch research orders

Storage Conditions

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

Shelf Life

- 24 months (unopened, industrial/research grade, specified storage conditions)
- 6 months after opening (if sealed and stored properly at 4℃ 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 (large-scale operation/fine powder handling)
- Operate in well-ventilated area/fume hood; avoid dust inhalation and eye/skin direct contact
- Wash hands thoroughly with soap and water after handling; do not eat/drink/smoke in the work area
- In case of eye contact, rinse with plenty of water for 10-15 minutes; consult a doctor if irritation persists
- Do not ingest the product; 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 **ISO 9001 (Quality)** and **ISO 14001 (Environment)** management system standards
- Each batch is tested by an independent third-party laboratory and accompanied by a **Certificate of Analysis (COA)**
- Standardized synthesis and purification process, low batch-to-batch variation, stable product quality
- Provide custom synthesis service for high-purity deoxyartemisinin (99.0%+ assay) and custom particle size