

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: Hydroquinone (1,4-Benzenediol)
- English Name: Hydroquinone; 1,4-Benzenediol
- CAS Number: 123-31-9
- Formula: C₆ H₆ O₂
- Molecular Weight: 110.11 g/mol
- Product Characteristics: White crystalline powder with a faint phenolic odor. High-purity aromatic diol with excellent reducing and antioxidant properties. Toxic, slightly flammable, and soluble in water/organic solvents. Suitable for chemical synthesis, photography, and cosmetics (regulated use).

2. Technical Specifications

Item	Specification
Appearance	White to off-white crystalline powder
Purity (HPLC)	≥ 99.0%
Melting Point	172-175°C
Water Content	≤ 0.5%
Heavy Metals (Pb)	≤ 0.5 ppm
Heavy Metals (As)	≤ 0.1 ppm
Iron (Fe)	≤ 1 ppm
Non-Volatile Residue	≤ 0.05%
Solubility (25°C)	Soluble in water (7 g/L), ethanol, ether
Antioxidant Activity	Effective free radical scavenger

3. Product Advantages

1. High Purity: Low impurity content ensures stable antioxidant and reactivity performance.
2. Strong Reducibility: Ideal for polymerization inhibitors and oxidation-reduction reactions.
3. Versatile Application: Key intermediate for dyes, pharmaceuticals, and photographic chemicals.
4. Good Solubility: Soluble in water/organics, suitable for multi-component systems.

4. Application Fields

- Chemical Synthesis: Precursor for dyes, pharmaceuticals, and monomers (e.g., styrene polymerization inhibitor).
- Photography: Developing agent in black-and-white photography.
- Cosmetics: Skin-lightening agent (regulated concentration ≤ 2%).
- Laboratory Research: Analytical reagent and antioxidant.

5. Usage Methods

- Dosage: 0.1-5% concentration (adjust by application).

- Application: Dissolve in water/ethanol before use; avoid contact with oxidizers.
- Optimal Conditions: Store in dark environment; avoid sunlight and high temperature.

6. Packaging & Storage

- Packaging: 1kg/5kg HDPE bags, 25kg cardboard drums, 50kg steel drums (UN-approved).
- Storage: Cool, dark, well-ventilated warehouse ($\leq 30^{\circ}\text{C}$); sealed, away from heat/sparks/oxidizers.
- Shelf Life: 12 months (unopened, specified conditions).
- Transportation: Classified as toxic hazardous goods; transport per regulations.

7. Safety & Protection

- Toxic and carcinogenic: No smoking near storage/use areas; prohibit open flames.
- Wear dust mask, nitrile rubber gloves, and safety glasses during handling.
- Avoid dust inhalation, skin contact, and ingestion; ensure local exhaust ventilation.

8. Quality Assurance

- Manufactured under ISO 9001 quality management system.
- Each batch comes with a COA for compliance verification.
- Provide technical support for synthesis optimization and safety operation.