

Technical Data Sheet (TDS)

1. Product Overview

- Product Name: 1,5-Pentanediol
- English Name: 1,5-Pentanediol
- CAS Number: 111-29-5
- Formula: C₅ H₁₂O₂
- Molecular Weight: 104.15 g/mol
- Product Characteristics: Colorless, odorless, clear viscous liquid. High-purity aliphatic diol with excellent solubility, hygroscopicity, and chemical stability. Non-flammable, low-toxic, and compatible with water/organic solvents. Suitable for polymer synthesis, cosmetics, and pharmaceutical excipients.

2. Technical Specifications

Item	Specification
Appearance	Colorless clear viscous liquid
Purity (GC)	≥ 99.0%
Water Content	≤ 0.2%
Density (20°C)	0.990-0.992 g/cm ³
Boiling Range	238.0-242.0°C
Flash Point (Closed Cup)	129°C
Viscosity (20°C)	130 mPa·s
Non-Volatile Residue	≤ 0.005%
Heavy Metals (Pb)	≤ 0.5 ppm
Heavy Metals (As)	≤ 0.1 ppm
Acidity (as CH ₃ COOH)	≤ 0.001%
Water Solubility	Fully miscible

3. Product Advantages

1. High Purity: Low impurity content ensures stable performance in synthesis/formulations.
2. Excellent Compatibility: Dissolves polar/non-polar substances; ideal for multi-component systems.
3. Hygroscopic & Stable: Maintains moisture; stable under normal storage/use conditions.
4. Low Toxicity: Safe for industrial and pharmaceutical applications.

4. Application Fields

- Polymer Industry: Monomer for polyester, polyurethane, and polyether synthesis.
- Cosmetics: Humectant and emollient in creams, lotions, and hair care products.
- Pharmaceutical: Excipient and solvent for drug formulations.
- Industrial: Plasticizer, antifreeze, and coating/adhesive additive.

5. Usage Methods

- Dosage: 10-40% concentration (adjust by application).
- Application: Mix directly with ingredients; heat ($\leq 80^{\circ}\text{C}$) for dissolution in high-viscosity systems.
- Optimal Conditions: Store in sealed containers; avoid high temperature ($> 60^{\circ}\text{C}$).

6. Packaging & Storage

- Packaging: 5L HDPE cans, 20L HDPE drums, 200L HDPE drums, 1000L IBC totes (UN-approved).
- Storage: Cool, dry, well-ventilated warehouse ($\leq 30^{\circ}\text{C}$); sealed, away from heat/oxidizers.
- Shelf Life: 24 months (unopened, specified conditions).
- Transportation: Non-hazardous; transport by ordinary vehicles.

7. Safety & Protection

- Low-toxic and non-flammable; routine handling requires no special precautions.
- Wear nitrile rubber gloves and safety glasses for large-scale/prolonged contact.
- Avoid eye contact; rinse with plenty of water for 5-10 minutes if exposed.

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 application guidance.