

Vertexfil Technical Data Sheet (TDS)

Product Name: Premium PLA 3D Printing Filament

1. General & Physical Properties (基本与物理性能)

Property (性能)	Testing Method (测试标准)	Typical Value (典型值)
Material (材质)	-	Polymeric Acid (PLA)
Diameter (线径)	Laser Gauge	1.75 mm
Diameter Tolerance (公差)	2-Axis Control	±0.02mm
Density (密度)	ASTM D792	1.24 g/m³
Melt Flow Index (熔体指数)	ASTM D1238 (210°C, 2.16kg)	6-9g/10min
Odor (气味)	-	Odorless / Sweet (Corn-based)

2. Mechanical Properties (机械性能)

Property (性能)	Testing Method (测试标准)	Typical Value (典型值)
Tensile Strength (拉伸强度)	ASTM D638	60 MPa
Elongation at Break (断裂伸长率)	ASTM D638	6%
Flexural Strength (弯曲强度)	ASTM D790	85 MPa
Flexural Modulus (弯曲模量)	ASTM D790	2,500 MPa
Izod Impact Strength (悬臂梁冲击强度)	ASTM D256 (Notched, 23°C)	4.5kJ/m³

3. Thermal Properties (热性能)

Property (性能)	Testing Method (测试标准)	Typical Value (典型值)
Melting Point (熔点)	DSC	165 - 180 °C
Glass Transition Temp (玻璃化转变温度)	DSC	55 - 60°C
Heat Deflection Temp (热变形温度)	ASTM D648 (0.45MPa)	52°C

4. Recommended Printing Settings (官方推荐打印参数)

- **Nozzle Temperature (喷嘴温度):** 190 - 220°C (Recommended: 205°C)
- **Bed Temperature (热床温度):** 0 - 60°C
- **Bed Surface (热床表面):** PEI Sheet, Glass, or Blue Tape
- **Printing Speed (打印速度):** 40 - 100mm/s (Compatible with high-speed printing up to 300mm/s for modified series)
- **Cooling Fan (冷却风扇):** 100% ON
- **Drying Recommendation (烘干建议):** Not required for fresh spools. If exposed to humidity: 55°C for 4 hours.

5. Compliance & Sustainability (合规与环保声明)

- **Certifications:** RoHS Compliant, REACH Certified, 100% Heavy Metal-Free.
- **Eco-Friendly Note:** Made from renewable plant-based resources (corn starch). 100% biodegradable under industrial composting conditions.

Disclaimer: The values handled contained in this data sheet are typical values for reference purposes only. Actual properties can vary depending on individual printer specifications, environmental conditions, and printing profiles.