

e4D-1

Technical Data Sheet

Heat-induced shape memory material is modified based on PLA material; it can be deformed by force in hot water, and can be fixed and deformed at room temperature and can be stored for a long time. When placed in hot water again, the parts can return to the original shape.

Material Status	Mass Production
Characteristics	<ul style="list-style-type: none"> • Shape memory • Excellent printability
Applications	<ul style="list-style-type: none"> • Home • Robot • Wear • Toy
Form	<ul style="list-style-type: none"> • Filament
Processing method	<ul style="list-style-type: none"> • 3D Print, FDM Print

	Testing method	Typical value
Physical Properties		
Density	GB/T 1033	1.23 g/cm ³
Melt Flow Index	GB/T 3682	5.8 (200°C/2.16kg)
Mechanical Properties		
Tensile Strength	GB/T 1040	48.89 MPa
Elongation at Break	GB/T 1040	168.83 %
Flexural Strength	GB/T 9341	49.45 MPa
Flexural Modulus	GB/T 9341	1302.4 MPa
IZOD Impact Strength	GB/T 1843	7.5 kJ/m ²
Thermal Properties		
Heat distortion Temperature	GB/T 1634	N/A
Continuous Service Temperature	IEC 60216	N/A
Maximum (short term) Use Temperature		N/A
Electrical Properties		
Insulation Resistance	DIN IEC 60167	N/A
Surface Resistance	DIN IEC 60093	N/A

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Recommended printing parameters

Extruder Temperature	200-230°C
Build Platform Temperature	45-60°C
Fan Speed	100%
Printing Speed	40 - 50mm/s

Based on 0.4 mm nozzle and Simplify 3D v.4.1.2. Printing conditions may vary with different nozzle diameters

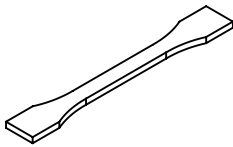
Drying Recommendations

N/A

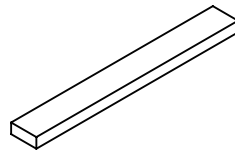
Notes

The 4D printing material has a low softening temperature. When printing the 4D filament, pls pay attention to the extruder. If the temp is too high, it may cause the material to soften and block the nozzle.

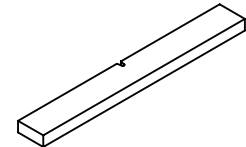
Mechanical Properties



Tensile testing specimen GB/T 1040



Flexural testing specimen GB/T 9341



Impact testing specimen GB/T 1043

The physical properties, mechanical properties, thermal properties, and electrical properties of the filament are obtained based on the injection molding spline test.

Print test condition:

Extruder Temperature	190-230°C
Build Platform Temperature	45°C
Outline/Perimeter Shells	4
Top/Bottom Layers	4
Infill Percentage	20%
Fan speed	100%
Printing speed	40mm/s

Based on 0.4 mm nozzle and Simplify 3D v.4.1.2.

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