Technical data sheet PVA

Ultimaker

Chemical Name	Polyvinyl alcohol
Description	PVA (Polyvinyl Alcohol) is a water soluble support material for multi-extrusion 3D printing. With a good thermal stability, Ultimaker PVA is ideal for printing complex models that require supports for large overhangs, deep internal cavities, and intricate geometries. Designed for a seamless 3D printing experience, our PVA provides good adhesion to both PLA and Nylon.
Key features	Good thermal stability resulting in better degradation resistance compared to other PVA filaments; less moisture sensitive than other PVA filaments; great adhesion to both PLA and Nylon; safe dissolution in tap water (no harmful chemicals required); biodegradable with no hazardous by-products.
Applications	Reliable 3D printing of water soluble support structures for PLA and Nylon build materials. PVA molds
Non suitable for	Reliable 3D printing of water soluble support structures for ABS or CPE build materials

Filament specifications	Value	Method
Diameter	2.85±0.10 mm	-
Max roundness deviation	0.10 mm	-
Net filament weight	350 g	-

Color information	Color	Color code
	Natural	n/a

Mechanical properties (*)	Injection molding		3D printing	
	Typical value	**Test method**	**Typical value**	**Test method**
Tensile modulus	3860 MPa	ISO 527 (1 mm/min)	-	-
Tensile stress at yield	-	-	-	-
Tensile stress at break	78 MPa	ISO 527 (50 mm/min)	-	-
Elongation at yield	-	-	-	-
Elongation at break	9.90 %	ISO 527 (50 mm/min)	-	-
Flexural strength	-	-	-	-
Flexural modulus	-	-	-	-
Izod impact strength, notched (at 23˚C)	-	-	-	-
Charpy impact strength, unnotched (at 23˚C)	1.6 kJ/m^2	ISO 179	-	-
Hardness	-	-	-	-

Thermal properties	Typical value	Test method
Melt mass-flow rate (MFR)	17-21 g/10 min	(190 ˚C, 21.6 kg)
Heat deflection (HDT) at 0.455 MPa	-	-
Heat deflection (HDT) at 1.82 MPa	-	-
Glass transition	60.2 ˚C	ISO 306
Coefficient of thermal expansion (flow)	-	-
Coefficient of thermal expansion (xflow)	-	-
Melting temperature	163 ˚C	ISO 11357
Thermal shrinkage	-	-

Other properties	Typical value	Test method
Specific gravity	1.23	ASTM D1505
Flame classification	-	-

(*) See notes.

Notes

Properties reported here are average of a typical batch. Ultimaker is constantly working on extending the TDS data.

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