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 / 750 g	-
Filament length	~45 m / ~96 m	-

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	-	-
Vicat softening temperature at 10N	60.2 ˚C	ISO 306
Glass transition	-	-
Coefficient of thermal expansion	-	-
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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