eSUN®

PVA

Technical Data Sheet

PVA is a water-soluble material that is often used as a support material with no need of adding any chemical and speical treating. Leave the part in a warm water bath dissolve faster. After dissolution, there is no residue on the model surface with smoothy effect; it can be worked with PLA, TPU, PA(nylon) and other consumables materials to print extremely complex shapes or support materials with a partially closed cavity model. It's also a good choice to work for multi-nozzle printers.

Material Status	Mass Production
Characteristics	• Water soluble • Support material.
Applications	• Support material in water soluble • application
Form	• Filament
Processing method	• 3D Print, FDM Print

	testing method	Typical value	
Physical Properties			
Density	GB/T 1033	1.25	g/cm³
Melt Flow Index	GB/T 3682	N/A	(190℃/2.16kg)
Mechanical Properties			
Tensile Strength	GB/T 1040	22	MPa
Elongation at Break	GB/T 1040	360	%
Flexural Strength	GB/T 9341	N/A	
Flexural Modulus	GB/T 9341	N/A	
IZOD Impact Strength	GB/T 1843	N/A	
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	

Recommended printing parameters

Extruder Temperature	180- 230℃
Build Platform Temperature	45-60℃
Fan Speed	100%
Printing Speed	20 - 50mm/s

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

Notes

Suggest to dry the material before printing (45℃/＞10H) to get perfect printing effect. It is recommended to work with eBOX(3D filament dryer) in printing.

2. It is recommended to set the distance between the support and the model to 0, Slow down and turn off the fan for the first layer to bond well with the main material.
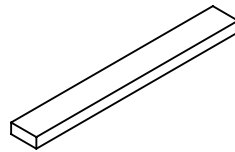
Precautions:

When slicing, it is best to turn on the Z seam alignment and starting point alignment functions, turn off the Z-axis lift and exit, avoid passing through the shell when idling, optimize the slicing printing path, and appropriately reduce the printing speed to achieve the best printing effect.
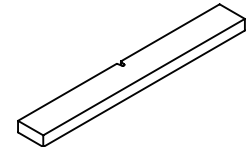
Mechanical Properties
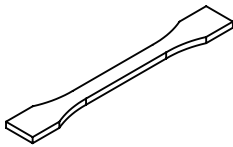
Tensile testing specimen   GB/T 1040   Flexural testing specimen   GB/T 9341   Impact testing specimen   GB/T 1043

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

Print test condition：

Extruder Temperature	180-230℃
Build Platform Temperature	45℃
Outline/Perimeter Shells	4
Top/Bottom Layers	4
Infill Percentage	20%
Fan speed	100%
Printing speed	30mm/s

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

Notice