Innofil 3D | BASF We create chemistry

Technical Data Sheet

Innofil3D PRO1

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General information

Components

Polylactic acid blend based filament for Fused Filament Fabrication.

Product Description

Pro1 is an extremely versatile tough PLA filament made for professionals. It reduces your printing time by 30% – 80%, (subject to printer and object limitations) and the strength exceeds overall mechanical properties of printed ABS parts. Printer settings can be tuned to achieve blazing fast speeds or an unrivaled surface finish. The excellent quality control ensures the highest levels of consistency between colors and batches, it will perform as expected, every time.

Delivery form and warehousing

Innofil3D PRO1 filament should be stored at 15 - 25°C in its originally sealed package in a clean and dry environment. If the recommended storage conditions are observed the products will have a minimum shelf life of 12 months.

Product safety

Recommended: Process materials in a well ventilated room, or use professional extraction systems. For further and more detailed information please consult the corresponding material safety data sheets.

Notice

The data contained in this publication are based on our current knowledge and experience. In view of the many factors that may affect processing and application of our product, these data do not relieve processors from carrying out their own investigations and tests; neither do these data imply any guarantee of certain properties, nor the suitability of the product for a specific purpose. Any descriptions, drawings, photographs, data, proportions, weights etc. given herein may change without prior information and do not constitute the agreed contractual quality of the product. It is the responsibility of the recipient of our products to ensure that any proprietary rights and existing laws and legislation are observed.

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Recommended 3D-Print processing parameters	
Nozzle Temperature	200 – 220 °C / 392 – 428 °F
Build Chamber Temperature	-
Bed Temperature	50 – 70 °C / 122 – 158 °F
Bed Material	Glass, tape at low temperatures
Nozzle Diameter	≥ 0.4 mm
Print Speed	40 - 150 mm/s

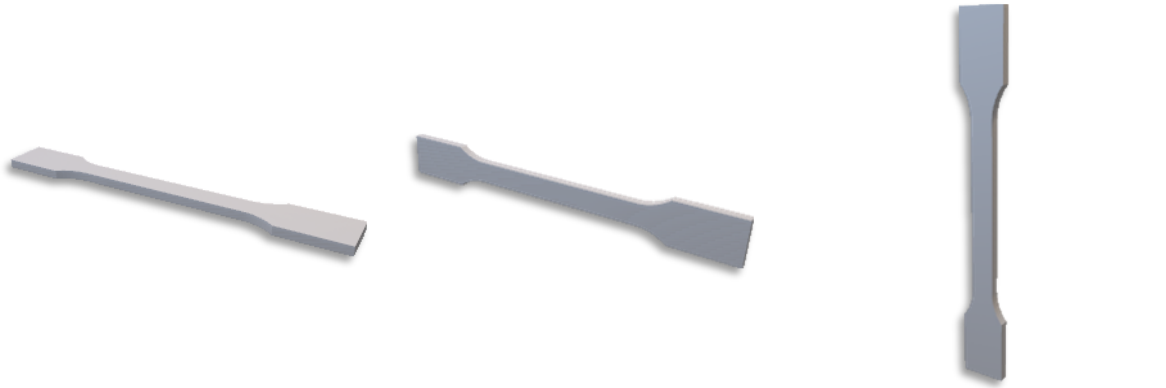
Drying Recommendations	
Drying recommendations to ensure printability	60 °C in a hot air dryer or vacuum oven for 4 to 16 hours

Please note: To ensure constant material properties the material should always be kept dry.

General Properties		Standard
Printed Part Density	1250 kg/m^3 / 78.0 lb/ft^3	ISO 1183-1

Thermal Properties		Standard
Glass Transition Temperature	63.0 °C / 145 °F	ISO 11357-2
Melting Temperature	170 – 180 °C / 338 – 356 °F	ISO 11357-3
Melt Volume Rate	18.2 cm^3/10 min / 1.1 in^3/10 min (210 °C, 2.16 kg)	ISO 1133

Mechanical Properties



Print direction	Standard	XY	XZ	ZX
		Flat	On its edge	Upright
Tensile strength	ISO 527	48.0 MPa / 7.0 ksi	-	21.8 MPa / 3.2 ksi
Elongation at Break	ISO 527	21.9 %	-	0.9 %
Young's Modulus	ISO 527	3166 MPa / 459 ksi	-	2930 MPa / 425 ksi
Flexural Strength	ISO 178	92.4 MPa / 13.4 ksi	99.1 MPa / 14.4 ksi	-
Flexural Modulus	ISO 178	2823 MPa / 409 ksi	2340 MPa / 339 ksi	-
Flexural Strain at Break	ISO 178	4.3 %	4.4 %	-
Impact Strength Charpy (unnotched)	ISO 179-2	20.4 kJ/m^2	18.8 kJ/m^2	-