Jabil **PA 4500** Filament

Technical Data Sheet

Product Description

PA 4500 Filament is a low warp, neat nylon copolymer that has good lay flat/low warp properties, excellent appearance, strength in both XY and XZ directions, toughness, and can be printed at lower temps (240-260° C).

Applications for this material include component production of less than 20,000 per year with complex geometries that require good wear properties and appearance but also strength and durability, such as slides, screen printing pallets, automation sleds, adaptors for fluid and materials handling, end-of-arm tooling (EOAT), masking covers, die cast models and patterns, clips, covers, housings, and gears.

Advantages

Along with easier printability, PA 4500 filament also delivers better appearance, over 100% elongation at break and better overall strength compared to other commercial PA's and products like PETg and PLA.

Storage and Use

PA 4500 is highly hygroscopic, meaning it will quickly absorb and retain moisture from the atmosphere, affecting visual quality and mechanical properties. For best results, print and store filament in a dry environment. If necessary, dry filament in an oven at up to 75 °C (165 °F) for 6 - 12 hours.

For the latest print profiles, search for Jabil Engineered Materials in the Cura Marketplace.

For complete copies of the Print Settings and the Printing & Drying Guide, visit our PA 4500 Webpage.

Properties

Mechanical Properties - Dry as Printed[1]			
	Test Condition	Typical Value	Method
Tensile Modulus (MPa)	XY coupons, Ambient	1930	ASTM D638, Type I
Tensile Elongation at Break (%)		>100	
Ultimate Tensile Strength (MPa)		56.0	
Flexural Modulus (MPa)	XY coupons, Ambient	1440	ASTM D790
Flexural Strength (MPa)		56.9	
Flexural Strain (%)		>5	
Izod Impact, Notched (J/m)	XY coupons, Ambient	61.5	ASTM D256
Izod Impact, Un-notched (J/m)	XY coupons, Ambient	830	

1. Testing conducted on bars printed at 260 °C and tested at <0.20 wt% moisture. Typical values are for reference only.

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Mechanical Properties - Moisture Conditioned[2]			
	Test Condition	Typical Value	Method
Tensile Modulus (MPa)	XY coupons, Ambient	1050	ASTM D638, Type I
Tensile Yield Strength (Mpa)		30.8	
Tensile Elongation at Break (%)		>500	
Ultimate Tensile Strength (MPa)		41.6	
Flexural Modulus (MPa)	XY coupons, Ambient	497	ASTM D790
Flexural Strength (MPa)		20.4	
Flexural Strain (%)		>5	
Izod Impact, Notched (J/m)	XY coupons, Ambient	282	ASTM D256
Izod Impact, Un-notched (J/m)	XY coupons, Ambient	1714	

2. Testing conducted on bars printed at 260 °C and conditioned for 14 days at 23 °C and 50 % RH. Typical values are for reference only.

Thermal Properties			
	Test Condition	Typical Value	Method
Heat Deflection Temperature (°C)	0.455 Mpa	62	DMA
Melt Temperature, Peak (°C)	20°C/min ramp	190	DSC

Other Physical Properties			
	Test Condition	Typical Value	Method
Density (g/cm^3)	Ambient	1.10	ASTM D792

Dimensional Properties			
	Test Condition	Typical Value	Method
Diameter: Mean, Indiv. Axis (mm)	In-line, 100% inspection	1.75±0.05 2.85±0.05	Laser Micrometer