Jabil PA 4035 CF Filament
Technical Data Sheet

Product Description

PA 4035 CF is a carbon fiber PA12 copolymer which provides greater stiffness, strength and toughness over similar products on the market. The high carbon fiber loading provides superior tensile strength and modulus while the PA12 base promotes relatively high ductility and ease of handling. Special formulation and processing reduce filament breakage during loading and printing. PA 4035 CF prints on any open-source desktop filament 3D printer.

PA 4035 CF is well suited for printing ducting in automotive and aerospace applications, casting patterns, composite tooling and prosthetics. For demanding applications within the aerospace and automotive industries, the filament provides high heat deflection temperatures. The dimensional stability also increases compared to standard nylon due to the additional of carbon fiber. In addition, PA 4035 CF increases stiffness and strength in load bearing orientations while showing less warping than standard nylon.

Available in black, 2.85 mm and 1.75 mm.

Advantages

PA 4035 CF is an extremely strong and stiff material which is great for products that require additional strength. Advantages are:

- High strength, stiffness and toughness
- Mechanical properties can be tailored by adjusting fill orientation
- Superior printed part surface finish quality
- Ease of handling filament during loading and printing
- Surface resistivity of ≤E9 for ESD sensitive applications
- Low print temperature enables the use on more machines

Storage and Use

PA 4035 CF is moderately hygroscopic, meaning it will absorb and retain some 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 80 °C (175 °F) for 3 – 4 hours.

Properties

Mechanical Properties[1]

	Test Condition	Typical Value	Method
Tensile Modulus (GPa)	+/- 45° Infill	6.0	ASTM D638, Type I
Tensile Elongation at Break (%)		3.9	
Ultimate Tensile Strength (MPa)		66	
Flexural Modulus (GPa)	+/- 45° Infill	5.1	ASTM D790
Flexural Strength (MPa)		110	
Izod Impact (J/m)	Notched	191	ASTM D256
Izod impact (J/m)	Un-Notched	557	

1. Testing conducted on bars printed in XY orientation at 250°C and tested dry. Typical values are for reference only.

Thermal Properties[1]			
	Test Condition	**Typical Value**	**Method**
HDT @ 0.455 MPa (°C)	+/- 45° Infill	154	DMA
HDT @ 1.82 MPa (°C)		89	
Melt Temperature (°C)	20 °C/min	180	DSC

1. Testing conducted on bars printed in XY orientation at 250°C and tested dry. Typical values are for reference only.

Other Properties			
	Test Condition	**Typical Value**	**Method**
Density	N/A	1.18	Gas Pycnometer
Diameter: Mean, Indiv. Axis (mm)	In-line, 100% inspection	+/- 0.05	Laser Micrometer

Disclaimer: The information in this technical data sheet, including material properties, are obtained from testing representative samples under carefully controlled conditions and are provided for reference only. Material properties may be impacted by storage, handling, processing equipment/parameters, and product design, among other factors. The information is not a substitute for user testing to determine fitness for any specific use and the user is responsible for ensuring safe and lawful use of the product.

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