

# PA12CF35

## Carbon Fiber PA12 Copolymer

PA12CF35 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. 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, PA12CF35 increases stiffness and strength in load bearing orientations while showing less warping than standard nylon.

Mechanical Properties	Standard	Value	Unit
Ultimate Tensile Strength	ASTM D638	66	MPa
Tensile Modulus	ASTM D638	6.0	GPa
Elongation at Break	ASTM D638	3.9	%
Flexural Strength	ASTM D790	110	MPa
Flexural Modulus	ASTM D790	5.1	GPa
Hardness Shore	Standard	Value	Unit
Hardness			

Thermal Properties	Standard	Value	Unit
HDT @ 0.45 MPa	DMA	154	°C
Glass Transition Temp			°C
Physical Properties	Standard	Value	Unit
Density			g/cm <sup>3</sup>
Certifications and Tests	Standard	Value	Unit
Flammability (UL 94)			
USP Class VI Certified			

### Characteristics

- 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  $\leq E9$  for ESD sensitive applications
- Low print temperature enables the use on more machines
- Shows less warping than standard nylon

### Applications

- Automotive, aerospace, general manufacturing, medical
- Ducting for automotive and aerospace
- Casting patterns
- Composite tooling
- Prosthetics
- Aluminum replacement

### Considerations

- Hardened nozzles and replacement feeder gears should be ordered. Due to the abrasiveness of the material, it will wear down brass nozzles and feeder gears. We sell hardened nozzles, for your 3ntr printer.

**Printing Skill & Experience:**  Beginner  Intermediate  Advanced  Expert

- PA12CF35 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.

### Printer Compatibility

<input checked="" type="checkbox"/> 3ntr A2v4	<input checked="" type="checkbox"/> 3ntr A4v4	<input type="checkbox"/> EVO-T	<input type="checkbox"/> EVO22-T
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Available Colors from [Plural AM](#): Black