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Carbonyte Technical Data Sheet

HIGHEST RATED FILAMENT ON AMAZON
60-DAY MONEY BACK GUARANTEE

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Description:

Very stiff and strong composite material made from carbon-fibre infused Nylon (PA12). Anti-static, high impact/impact modified, and is suitable for outdoor use due to its enhanced UV resistance over normal Nylon.

Applications:

Mechanical engineering, medical devices, power transmission, aviation (commercial and modelling), mobile phones and other portable devices.

Recommended Print Settings:

Printing Temps 1.75mm	260-270°C
Printing Temps 2.85mm	260-275°C
Heated Bed Temp	100-115°C
Cooling Fans	Off
Ideal Build Volume	Doors and covers closed/in place
Extrusion Multiplier	x1.0 (100%)
Retraction (direct drive)	Try 2mm as a starting point at 20-30mm/s
Retraction (bowden feed)	Varies per printer, as above, but try 4mm as a starting point
Print Speed Advisory	None
Print Surface Advisory	Do not 'squish' first layer when printing onto phenolic resin surfaces such as Tufnol
Print Layer Advisory	Print layers as thin as possible (<0.2mm/200µm) so as to keep interlayer distortional stresses to a minimum

General Advice:

Very abrasive - Requires a hardened steel nozzle in place of a normal brass one.

A 0.5mm nozzle is advisable.

Start at the low end of the temperature range and increase if needed for faster print speeds.

Prone to oozing - Do not leave the hotend idle at printing temperatures for more than a few minutes as oozing can be an issue.

As this material has a propensity too ooze, it may be necessary to manually wipe the nozzle seconds before a print starts.

If support is needed, consider using a dissolvable or easily removable support material such as rigid.ink Break-Away as supports made from the primary material can be difficult to remove.

Material Properties:

Physical Properties (1)	Value
Density	1.07g/cm^3
Glass Transition Temperature	95-105°C
Melting Temperature	178°C
Heat Deflection Temperature (2)	160°C
Heat Deflection Temperature (3)	100°C
Tensile Strength, Yield	9500 MPa / 1377858.5 psi

(1) NOT to be construed as specifications
(2) @1.8 MPa
(3) @8.0 MPa

Other Info:

Optimal print thickness is 50% of nozzle bore size.
However, if warping occurs, print thinner layers and print slower

Print Surface Materials:

Adheres well Kapton Tape (Polyimide film), may adhere to phenolic resin surfaces to the point of destruction of the surface if first layer is 'squished' into bed material