

PETG CF

Carbon Fiber PETG

PETG CF offers a host of additional benefits, thanks to the addition of high-modulus carbon fiber. Enjoy high stiffness without added weight, along with heat resistance, and superior water and chemical resistance and low warpage. While traditional PETG already has a low tendency to warp, the addition of carbon fiber reduces risk of warpage even further, creating tight tolerances and even higher dimensional accuracy. PETG CF is engineering-grade and highly printable, featuring an appealing uniform texture, dark charcoal color and an even, matte finish.

| Mechanical Properties | Standard | Value | Unit |
|---------------------------|----------|-------|------|
| Ultimate Tensile Strength | ISO 527 | 56 | MPa |
| Tensile Modulus | ISO 527 | 5230 | MPa |
| Elongation at Break | ISO 527 | 3 | % |
| Flexural Strength | ISO 178 | 80 | MPa |
| Flexural Modulus | ISO 178 | 5740 | MPa |
| Hardness Shore | Standard | Value | Unit |
| Hardness | | | |

| Thermal Properties | Standard | Value | Unit |
|--------------------------|----------|-------|-------------------|
| HDT @ 0.45 MPa | ISO 75 | 77 | °C |
| Glass Transition Temp | DSC | 80 | °C |
| Physical Properties | Standard | Value | Unit |
| Density | ISO 1183 | 1.34 | g/cm ³ |
| Certifications and Tests | Standard | Value | Unit |
| Flammability (UL 94) | | | |
| USP Class VI Certified | | | |

Characteristics

- Superior chemical resistance vs. ABS
- Amorphous structure giving it low, near isotropic shrinkage
- Low moisture absorption, 3x lower than ABS
- Very low odor while printing
- Wide processing ranges from 230-270°C

- Unstressed tensile bars molded of PETG exhibit good resistance to dilute aqueous solutions of mineral acids, bases, salts, and soaps, and to aliphatic hydrocarbons, alcohols, and a variety of oils. Halogenated hydrocarbons, short chain length ketones, and aromatic hydrocarbons dissolve or swell the plastic.

Applications

- Aerospace
- Civil Engineering
- Military
- Motorsports
- Light weight applications
- Rigid applications

Considerations

- We currently recommend a hardened steel nozzle with a minimum diameter of 0.4mm.
- Polymer/carbon fiber mixture increases the material's brittleness

Printing Skill & Experience:

Beginner Intermediate Advanced Expert

- Ideal layer height is 60% of nozzle diameter. We do not recommend printing layers smaller than 0.2mm with carbon fiber reinforced filaments.
- Frequent clogging
- Material is abrasive. We recommend using hardened nozzles, instead of brass nozzles, to reduce print issues caused by worn nozzles.

Printer Compatibility

| | | | |
|------------------------------------|------------------------------------|---|---|
| <input type="checkbox"/> 3ntr A2v4 | <input type="checkbox"/> 3ntr A4v4 | <input checked="" type="checkbox"/> EVO-T | <input checked="" type="checkbox"/> EVO22-T |
|------------------------------------|------------------------------------|---|---|

Available colors from [Airwolf 3D](#): Black