

Technical Data Sheet: CarbonX™ Carbon Fiber PEKK 3D Printing Filament

Physical Properties	Standard	Unit	Aerospace Grade (1)	Industrial Grade (2)
Density	ISO 1183	g/cc	1.38	1.38

Mechanical Properties	Standard	Unit	Aerospace Grade	Standard Grade
Tensile Strength, Break	ISO 527	MPa	115	105
Tensile Modulus	ISO 527	MPa	9560	8210
Tensile Elongation, Break	ISO 527	%	3	2.1
Flexural Strength	ISO 178	MPa	135	124
Flexural Modulus	ISO 178	MPa	9850	8300

Thermal Properties	Standard	Unit	Aerospace Grade	Standard Grade
Glass Transition Temperature (Tg)	DSC	°C	165	165
Deflection Temperature at 0.45 MPa (66psi)	ISO 75	°C	280	270

Electrical Property	Standard	Unit	Aerospace Grade	Standard Grade
Surface Resistance	ASTM D257	Ohm/sq	>10 ⁹	>10 ⁹

(1) Aerospace Grade: Utilizes Toray T-800 24K Aerospace-Grade Chopped Carbon Fiber

(2) Industrial Grade: Utilizes Specialty 50K Chopped Carbon Fiber

Printed Specimen Conditions
Printer: Open Source FDM/FFF
Nozzle: 0.4mm
Layer Height: 0.25mm
Infill: 100%, +/- 45°
Extrusion Temp: 385°C
Bed Temp: 130°C
Specimen Orientation: XY Flat