

# PC 1500 FR Filament

Jabil's PC 1500 FR is a flame-retardant, easy printing polycarbonate manufactured with FR UL V-0 material for durable parts. The material is perfect for parts that require strength, stiffness and impact resistance with flame retardancy. The PC 1500 FR testing performed in a qualified lab demonstrates V-0 burn properties on a printed part down to 1mm thickness when printed with the correct design and print parameters as outlined below.

Made from UL V-0 Yellow Card certified raw materials, Jabil's PC 1500 FR can be printed on Direct Drive and Bowden Tube 3D printers. This material, with its flame-retardant properties, is used in the aerospace and automotive industries.

Polycarbonate is an engineering material that can be challenging to print. A slurry of ABS in acetone or a PVP-based glue stick will provide strong bed adhesion during printing with clean release upon cooling.



## ADVANTAGES

Engineering-grade polycarbonate filament made from UL listed raw materials. An ISO 9001 Certificate of Analysis available upon request. Advantages of this product include excellent impact strength and ductility along with the material maintaining impact resistance while having very good flame retardancy and self-extinguishing properties. Applications for this material include housings (including battery housings), welding fixtures, brackets, motor mounts, and parts for aerospace and automotive.

## STORAGE AND USE

Polycarbonate is highly hygroscopic, meaning it will absorb and retain 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 - DRY AS PRINTED<sup>1</sup>

	Test Condition	Typical Value	Method
Tensile Modulus (MPa)	XY coupons, Ambient	2210	ASTM D638, Type I
Tensile Elongation at Break (%)	XY coupons, Ambient	6.0	ASTM D638, Type I
Ultimate Tensile Strength (MPa)	XY coupons, Ambient	61	ASTM D638, Type I
Flexural Modulus (MPa)	XY coupons, Ambient	2310	ASTM D790
Flexural Strength (MPa)	XY coupons, Ambient	93.9	ASTM D790
Izod Impact, Notched (J/m)	XY coupons, Ambient	50.7	ASTM D256
Izod Impact, Un-notched (J/m)	XY coupons, Ambient	850	ASTM D256

<sup>1</sup>Testing conducted on bars printed at 270°C and tested at <0.20 wt% moisture. Typical values are for reference only.

For additional information, visit [jabil.com/services/additive-manufacturing/engineered-materials](http://jabil.com/services/additive-manufacturing/engineered-materials)

**THERMAL PROPERTIES**

	Test Condition	Typical Value	Method
Heat Deflection Temperature (°C)	0.455 Mpa	131	DMA
Heat Deflection Temperature (°C)	1.82 Mpa	118	DMA
Glass Transition Temperature (°C)	20°C/min ramp	143	DSC

**OTHER PHYSICAL PROPERTIES**

	Test Condition	Typical Value	Method
Density (g/cm <sup>3</sup> )	Ambient	1.18	ASTM D792
Moisture Absorption (weight %)	Ambient	0.15	ASTM D570

**DIMENSIONAL PROPERTIES**

	Test Condition	Typical Value	Method
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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