

PC (POLYCARBONATE) FILAMENT

END USE

Polycarbonate (PC) is a high strength material intended for tough environments and engineering applications. It has extremely high heat deflection, and impact resistance. Polycarbonate also has a high glass transition temperature of 150° Celsius. This means it will maintain its structural integrity up to that temperature, making it suitable for use in high-temperature applications.

PHYSICAL PROPERTIES

Product Code(s)	PCB-NAT-1000
Colour(s)	Natural
Density / Specific Gravity (g/cm3)	1.17 - 1.21 (Test Standard - ASTM D792)
Apparent (Bulk) Density (g/cm3)	0.63 - 0.66 (Test Standard - ISO 60)
Melt Mass-Flow Rate (g/10min)	1.5 - 24 @ 300°C/1.2 kg (Test Standard - ASTM D1238)
Melt Volume-Flow Rate (cm3/10min)	2.0 - 23 @ 300°C/1.2 kg (Test Standard - ISO 1133)
Spiral Flow (in)	0.866 - 121
Flow (in/in)	5.0E-3 to 7.9E-3 (Test Standard - ASTM D955)
Across Flow (in/in)	5.7E-3 to 7.2E-3 (Test Standard - ASTM D955)
Water Absorption - 24hrs @ 73°F (%)	0.15 (Test Standard - ASTM D955)
Saturation @ 73°F (%)	0.34 - 0.35 (Test Standard - ASTM D570)
Equilibrium @ 73°F (%)	0.31 - 0.35 (Test Standard - ASTM D570)
Tensile Modulus @ 73°F (psi)	233000 to 388000 (Test Standard - ASTM D638)
Tensile Strength Yield @ 73°F (psi)	8250 to 9750 (Test Standard - ASTM D638)
Tensile Strength Break @ 73°F (psi)	6810 to 10700 (Test Standard - ASTM D638)
Tensile Elongation Yield @ 73°F (%)	3.5 to 7.0 (Test Standard - ASTM D638)
Tensile Elongation Break @ 73°F (%)	0.0 to 140 (Test Standard - ASTM D638)
Flexural Modulus @ 73°F (psi)	284000 to 409000 (Test Standard - ASTM D790)
Flexural Strength @ 73°F (psi)	11600 to 15900 (Test Standard - ASTM D790)
Compressive Strength @ 73°F (psi)	9000 to 16000 (Test Standard - ASTM D695)
Shear Strength @ 73°F (psi)	5800 to 10000 (Test Standard - ASTM D732)

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Coefficient of Friction	0.070 to 0.32 (Test Standard - ASTM D1894)
Taber Abrasion Resistance @ 73°F (mg)	9.85 to 10.8 (Test Standard - ASTM D1044)
Wear Factor (10 ⁻¹⁰ in ³ ·min/ ft·lb·hr)	0.0 to 9.9E+6 (Test Standard - ASTM D3702)
Notched Izod Impact @ 73°F (ft·lb/in)	0.40 to 18 (Test Standard - ASTM D256)
Rockwell Hardness @ 73°F (psi)	68 to 121 (Test Standard - ASTM D785)
Deflection Under Load 66psi (°F)	268 to 286 (Test Standard - ASTM D648)
Continuous Use Temperature (°F)	246 to 249 (Test Standard - ASTM D794)
Glass Transition Temperature (°F)	293 to 300 (Test Standard - DSC)
Vicat Softening Temperature (°F)	275 to 313 (Test Standard - ASTM D1525)
Melting Temperature (°F)	284 to 450
CLTE Flow (in/in/°F)	3.2E-5 to 3.9E-5 (Test Standard - ASTM D696, ISO 11359-2)
Tranverse (in/in/°F)	34.4E-6 to 1.0E-4 (Test Standard - ASTM D696)
Specific Heat @ 73°F (Btu/lb/°F)	0.298 to 0.301 (Test Standard - ASTM C351)
Thermal Conductivity @ 73°F (Btu·in/hr/ft ² /°F)	1.0 to 3.4 (Test Standard - ASTM C177)
Burning Rate (in/min)	0.0 to 4.0 (Test Standard - ISO 3795)
Glow Wire Flammability Index (°F)	1550 to 1760 (Test Standard - IEC 60695-2-12)
Glow Wire Ignition Temperature (°F)	1470 to 1610 (Test Standard - IEC 60695-2-13)
Oxygen Index (%)	25 to 26 (Test Standard - ASTM D2863)
Refractive Index	1.584 to 1.587 (Test Standard - ASTM D542)
Transmittance (%)	86.7 to 91.0 (Test Standard - ASTM D1003)
Haze (%)	-0.500 to 1.99 (Test Standard - ASTM D1003)

APPLICATION

Polycarbonate is ideal for prints that need impact and high heat resistance.

PRINTER SETTINGS

Spool Net Weight: 1kg	Print Temperature: 250-280°C	Bed Temperature: +110°C
Diameter: 1.75mm ± 0.05mm	Print Speed: 40-80mm/s	