PC Polycarbonate
Background

Polycarbonate (PC) is a high performance material intended for use in engineering and industrial settings.

As suggested by its name, PC contains carbonate groups that contribute significantly to its strength and toughness.

PC also has excellent temperature resistance, making it useful in high temperature applications as well.

Its strength, toughness, and temperature resistance makes it a useful material for final production or industrial parts.

PC is also useful with electronics since it is an insulator.
Applications

PC’s high performing properties make it a good choice for industrial applications.

Parts made from PC can withstand the demanding environment found in industry.

PC is also a good choice for storage, especially electronic enclosures.

Since PC does not conduct electricity, sensitive electronics will remain safe in PC enclosures.

Many of the parts on re:3D Gigabot printers is made with PC.

PC is perfect for any parts that needs to resist high temperatures.

- Electronic Enclosures
- Industrial Parts
- Heat Resistant Parts
- Storage
Material Properties

**Mechanical**

- **Young's Modulus**: 2,400 MPa
- **UTS**: 59.7 ± 1.8 MPa
- **Tensile Elongation**: 12.2 ± 1.4 %
- **Impact Strength**: 25.1 ± 1.9 J/m²
- **Shrinkage**: -

**Thermal**

- **Glass Transition**: 113 °C
- **Heat Distortion**: -
- **Decomposition**: >360 °C
Printer Settings

Extruder Temperature
250 ºC

Heated Bed Temperature
115 ºC

Bed Adhesion
Adhesive Required

Enclosure
Yes

Fans
On

Printing Speed
3,600 mm/min
Sustainability

Polycarbonate is recycled most often into a reground material.

This material is often considered for use in a pellet extrusion machine such as GBX.

Polycarbonate is not usually supported by recycling centers since it is grouped into resin code 7 with “other plastics”.

Polycarbonate also risks producing bisphenol A, commonly known as BPA.
PC Validated Suppliers

Coex  Polymaker PolyMax  MCPP PC-ABS V0
Questions?

Please, do not hesitate to reach out to support@re3d.org via email or visit re3d.org/support if you have any more questions about PC.

Want to validate your material?

Would you like to see your material listed as a validated supplier? Our engineers welcome your 2.85mm spools! Email info@re3d.org for more information.

Sources

- http://brandsdevelop.com/3d-sneakers/
- https://all3dp.com/2/3d-printed-gears-get-the-gear-that-fits-your-needs/
- https://www.amputee-coalition.org/3d-printed-prosthetics/
- https://fishyfilaments.com/