



## PC Polycarbonate

<b>Description</b>	
A strong, stiff, hard, tough transparent material that has excellent resistance to high temperatures. It has reasonable electrical insulation properties and excellent out door properties when stabilised.	
<b>Typical Applications</b>	
Syringes, spectacles, audio compact discs, glazing and lighting applications (UV stabilised grades)	
<b>Types of grade available</b>	
UV stabilised Flame retardant Glass filled	
<b>Optical Properties</b>	
Transmission	89%
<b>General Processing</b>	
Drying Time	4 to 5 hours
Drying Temperature	120C
Type of Drier	Hot Air
Purging	Run machine dry and purge with GPS
Moisture Absorption	0.15%
Other Considerations	
<b>Processing Injection Moulding</b>	
Barrel Settings	270 to 320C
Injection speed	Medium to High
Injection Pressure	Medium to High
Back Pressure	Medium
Screw Speed	Medium
Tool Temperature	90C
Melt Temperature	280C to 320C
Processing Stability	Residence time should not exceed 300C
Gate Considerations	Pinpoint and sub gates for smaller parts
Sprue & Runner Considerations	Full round or trapezoidal runners
<b>Processing Extrusion</b>	
Barrel Settings	270C to 300C

Screw Speed	50 – 100 rpm LD ratio 30 -1
Screen Packs	Only use course 20 -40
Haul-off / Cooling	Water bath chilled 10c
Calibration	Suitable for use with a vacuum calibrator or sizing plates.
<b>Mechanical Properties</b>	
Shrinkages	0.5% to 0.7%
Flexural Strength	75 – 100 MPa
Tensile strength at Yield	58-75 MPa
<b>Physical Properties</b>	
Density	1.2
Cold Bend	N/A
Cold Flex	N/A
Elongation at Break	8 -130%
Tensile Modulus	1.5 – 2.5 MPa
General Impact Strength	Excellent
Material Finish	High Gloss
<b>Thermal Properties</b>	
Vicat Softening Temperature	145C
Heat Deflection Temperature	130C
<b>Flammability</b>	
Flammability Rating	Flame retardant grades are available
<b>Weatherability</b>	
Suitability for outdoor use	Good if UV stabilised grade used, otherwise displays poor UV stability
<b>Fillers &amp; Additives</b>	
	UV stabilisers, glass fibre, flame retardants
<b>Chemical Resistance</b>	
Resistant to	Inorganic acids, most dilute organic acids
Not resistant to	Benzene, acetone, esters, ketones
<b>Food Contact Status</b>	
	Suitable for contact with food
<b>Colouring</b>	
	May be coloured on the machine by masterbatches but care should be taken to avoid dust contamination and water contamination. Very difficult to surface dye this material.

<b>WEEE &amp; ROHS Compliance</b>	Yes
<b>Bonding</b>	May be cemented with solutions of PC in methylene chloride. Epoxides, or hot melt adhesives based on PA may be used as adhesives.
<b>Welding</b>	May be welded by high frequency welding or ultrasonic welding

*This information has been provided as a general guide and we suggest that you carry out your own specific tests to be sure that this material is suitable for your application.*