

## Polycarbonate - Stock Shapes

### Chemical Designation

PC (Polycarbonate)

### Colour

transparent

### Density

1.19 g/cm<sup>3</sup>

### Main features

- excellent impact strength
- excellent strength and stiffness
- excellent dimensional stability
- good machinability

### Target Industries

- aircraft and aerospace technology
- food processing
- medical technology
- hygienic areas
- cleanroom technology
- packaging and paper machinery

<b>Mechanical properties</b>	<b>condition</b>	<b>value</b>		<b>test method</b>	<b>comment</b>
Modulus of elasticity (tensile test)	@ 73 °F	340,000	psi	ASTM D 638	(1) Injection molded data (2) Injection molded data (3) Injection molded data
Tensile strength at yield	@ 73 °F	9100	psi	ASTM D 638	
Elongation at break	@ 73 °F	90	%	ASTM D 638	
Flexural strength	@ 73 °F	14,400	psi	ASTM D 790	
Modulus of elasticity (flexural test)	@ 73 °F	320,000	psi	ASTM D 790	
Impact strength (Izod)	@ 73 °F	2.0	ft-lbs/in	ASTM D 256	
Rockwell hardness	@ 73 °F M Scale (R Scale)	70 (118)		ASTM D 785	1)
Coefficient of friction	Dynamic, 40 psi, 50 fpm	0.38		ASTM D 3702	2)
Wear (K) factor	Against Steel, 40 psi, 50 fpm	2500*10 <sup>-4</sup>	in <sup>3</sup> -min/ft-lbs-hr	ASTM D 3702	3)
<b>Thermal properties</b>	<b>condition</b>	<b>value</b>		<b>test method</b>	<b>comment</b>
Vicat softening point		309	°F	ASTM D 1525	1) (1) Injection molded data (2) Injection molded data
Deflection temperature	@ 66 psi	280	°F	ASTM D 648	2) (3) Injection molded data
Deflection temperature	@264 psi	270	°F	ASTM D 648	3) (4) per UL746B
Service temperature	Intermittent	275	°F	-	5) Injection molded data (6) per ASTM C351
Service temperature	Long Term	250	°F	-	4) Injection molded data (7) Injection molded data
Thermal expansion (CLTE)		3.8*10 <sup>-5</sup>	in/in/°F	ASTM D 696	5)
Specific heat		0.30	BTU/lb-F°	-	6)
Thermal conductivity		1.39	BTU-in/hr-ft <sup>2</sup> -°F	ASTM C 177	7)
<b>Electrical properties</b>	<b>condition</b>	<b>value</b>		<b>test method</b>	<b>comment</b>
Volume resistivity		1.0*10 <sup>17</sup>	Ω*cm	ASTM D 257	1) (1) Injection molded data
Dielectric strength		378	V/mil	ASTM D 149	2) (2) Injection molded data
Dissipation factor	@ 60 Hz, 73 °F	0.0009		ASTM D 150	3) (3) Injection molded data
Dielectric constant	@ 60 Hz, 73 °F, 50% RH	3.17		ASTM D 150	4) (4) Injection molded data
Dielectric constant	@ 1MHz	2.96		ASTM D 150	5) (5) Injection molded data
<b>Other properties</b>	<b>condition</b>	<b>value</b>		<b>test method</b>	<b>comment</b>
Moisture absorption	@ 24 hrs, 73 °F	0.15	%	ASTM D 570	1) (1) Injection molded data
Moisture absorption	@ saturation, 73 °F	0.35	%	ASTM D 570	2) (2) Injection molded data
Flammability (UL94)		HB		-	3) (3) @ 1.47mm thickness Injection molded data