

# Polycarbonate

## (PC)

### KEY FEATURES

- High Impact Resistance
- High Light Transmittance
- Abrasion and UV Protective Surfaces
- Effective Insulating Material
- Compliance with Flammability Ratings of Major Building Codes
- Excellent Weatherability

### DESCRIPTION

Polycarbonate (PC) plastics are a naturally transparent amorphous thermoplastic. The raw material allows for the internal transmission of light nearly in the same capacity as glass. Polycarbonate polymers are used to produce a variety of materials and are particularly useful when impact resistance and/or transparency are a product requirement (e.g. in bullet-proof glass). Polycarbonate also has very good heat resistance and can be combined with flame retardant materials without significant material degradation. Polycarbonate plastics are engineering plastics in that they are typically used for more capable, robust materials such as an impact resistant “glass-like” applications.

## TYPICAL PROPERTY VALUES

Physical	Properties	Condition	Units	Value	ASTM Test
	Density		g/cm <sup>3</sup>	1.2	D792
	Chemical Designation			PC	
	Filler				

Mechanical	Properties	Condition	Units	Value	ASTM Test
	Tensile Modulus	@ 73 °F	PSI	345,000	D638
	Tensile Strength	@ 73 °F	PSI	9,000	D638
	Shear Strength	@ 73 °F	PSI	9,200	D732
	Elongation @ Yld	@ 73 °F	%		
	Elongation @ Brk	@ 73 °F	%		
	Flexural Modulus	@ 73 °F	PSI	345,000	D790
	Flexural Strength	@ 73 °F, 5% strain	PSI	13,500	D790
	Compressive Modulus	@ 73 °F	PSI		
	Compressive Strength	@ 73 °F	PSI	12,500	D695
	Izod (Charpy) Impact Strength	@ 73 °F	ft-lbs/in	12-16	D256
	Rockwell Hardness	@ 73 °F	M (R) Scale		
Coefficient of Friction	Static				

Thermal	Properties	Condition	Units	Value	ASTM Test
	Heat Deflection Temperature	@ 66 PSI	°F	280	D648
	Service Temperature	Long Term	°F		
	Heat Deflection Temperature	@ 264 PSI	°F	270	D648
	Service Temperature	Intermittent	°F	210	
	Coefficient of Thermal Expansion		in/in/°F	3.75*10 <sup>-5</sup>	D696
	Specific Heat		BTU/lb-°F		
Thermal Conductivity		BTU-in/hr-ft <sup>2</sup> -°F	1.35	C177	

Other	Properties	Condition	Units	Value	ASTM Test
	Moisture Absorption	@ 24 hrs, 73 °F	%	0.15	D570
	Moisture Absorption	@ Saturation, 73 °F	%	0.4	D570
	Flammability	UL 94			
	Food Grade				
Relative Cost			\$\$		

• The data stated above are typical values intended for reference and comparison purposes only.  
• The data should not be used as a basis for design specifications or quality control.

• The information is provided as a guide to the best of our knowledge and given without obligation or liability.  
• Testing under individual application circumstances is recommended