Clear Machine Grade Polycarbonate

Polycarbonate is an engineering plastic with excellent dimensional stability and good strength and stiffness over a wide range of service temperatures. Commonly used for structural applications when clarity and impact strength are essential including lenses, manifolds, site glasses and machine guards. Polycarbonate can also be used in a wide variety of electrical applications since it has low moisture absorption, good insulating properties, and an excellent flammability rating. Polycarbonate is easy to fabricate, paint, and glue.

The following physical property information is based on typical values of the base polycarbonate resin.

Property	ASTM Test Method	Units	Rod	Sheet
Mechanical				
Flexural Modulus	ASTM D790	psi	338000	328000
Flexural Strength @yield	ASTM D790	psi	14100	13100
Hardness				
Rockwell M		M Scale	70	77
Rockwell R	ASTM D785	R Scale	118	-
Izod Impact Strength				
Notched	ASTM D256	ft•lbs/in	17	17
Tensile Elongation				
@break	ASTM D638	%	140	140
@yield	ASTM D638	%	7	6
Tensile Strength				
@break	ASTM D638	psi	9860	11600
@yield	ASTM D638	psi	8990	8990
Thermal				
Coefficient of Thermal Expansion	ASTM D696	in/in/°F	$3.8x10^{-5}$	$3.8x10^{-5}$
Flammability Rating @11.5mm*	UL94	-		V-0
Heat Deflection Temperature				
@66 psi	ASTM D648	F	275	288
@264 psi	ASTM D648	F	255	268
Thermal Conductivity	ASTM C177	(BTU•in)/(hr•ft^2•°F)	1.3	-
Electrical				
Dielectric Constant				
@60Hz	ASTM D150	-	3.17	2.95
@1MHz	ASTM D150	-	2.96	2.9
Dielectric Strength	ASTM D149	V/mil	380	760
Volume Resistivity	ASTM D257	ohm•cm	$>1.0x10^{17}$	$>1.0x10^{17}$
Optical				
Haze	ASTM D1003	%	1	0.5-2.0
Other				
Specific Gravity	ASTM D792	-	1.2	1.2
Water Absorption				
@24 hours	ASTM D570	%	0.15	0.2
@Equilibrium	ASTM D570	%	0.35	-

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.

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