



## CoolPoly® E4505 Thermally Conductive Polycarbonate (PC)

CoolPoly E series of thermally conductive plastics transfers heat, a characteristic previously unavailable in injection molding grade polymers. CoolPoly is lightweight, netshape moldable and allows design freedom in applications previously restricted to metals. The E series is electrically conductive and provides inherent EMI/RFI shielding characteristics.

Thermal	SI/Metric		Testing Standard
Thermal Conductivity	4 W/mK		ASTM E1461
Thermal Diffusivity	0.025 cm <sup>2</sup> /sec		ASTM E1461
Specific Heat	1.3 J/g°C		ASTM E1461
Coefficient of Linear Thermal Expansion			
Parallel (-30°C to +30°C)	33 ppm/°C		ASTM D696
Normal (-30°C to +30°C)	36 ppm/°C		ASTM D696
Temperature of Deflection			
@ 0.45MPa	136 °C		ISO 75-1,2
@ 1.80MPa	131 °C		ISO 75-1,2
Flammability	V0 @ 2.0mm		UL 94

Mechanical	SI/Metric	English	Testing Standard
Tensile Modulus	6000 MPa	870 ksi	ISO 527-1
Tensile Strength	45 MPa	6525 psi	ISO 527-1
Nominal Strain @ Break	1 %	1 %	ISO 527-1
Flexural Modulus	6250 MPa	900 ksi	ISO 178
Flexural Strength	83 MPa	12000 psi	ISO 178
Impact Strength			
Charpy Notched	2.8 kJ/m <sup>2</sup>	1.33 ft-lb/in <sup>2</sup>	ISO 179-1
Charpy Unnotched	10 kJ/m <sup>2</sup>	4.76 ft-lb/in <sup>2</sup>	ISO 179-1
Poisson's Ratio	0.38	0.38	ISO 527
Shear Modulus	2500 MPa	360 ksi	ISO 15310

Electrical	SI/Metric		Testing Standard
Effective Shielding	55 db @ 1GHz		ASTM D4935

Physical	SI/Metric	English	Testing Standard
Density	1.40 g/cc	0.0499 lb/in <sup>3</sup>	ISO 1183
Mold Shrinkage			
Flow	0.3 %	0.003 in/in	ASTM D551
Cross-Flow	0.6 %	0.006 in/in	ASTM D551

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