CoolPoly® E4505

Polycarbonate

Cool Polymers, Inc.

Message:

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 charactersitics.

General Information			
Features	Conductivity		
	Heat conduction		
	Electromagnetic shielding (EMI)		
	Good formability		
	Radio frequency shielding (RFI)		
RoHS Compliance	RoHS compliance		
Forms	Particle		
Processing Method	Injection molding		
Physical	**Nominal Value**	**Unit**	**Test Method**
Density	1.40	g/cm³	ISO 1183
Molding Shrinkage			ASTM D955
Flow	0.30	%	ASTM D955
Transverse flow	0.60	%	ASTM D955
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	6000	MPa	ISO 527-2
Tensile Stress (Yield)	45.0	MPa	ISO 527-2
Nominal Tensile Strain at Break	1.0	%	ISO 527-2
Flexural Modulus	6250	MPa	ISO 178
Flexural Stress	83.0	MPa	ISO 178
Shear Modulus	2500	MPa	ISO 537
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength	2.8	kJ/m²	ISO 179
Charpy Unnotched Impact Strength	10	kJ/m²	ISO 179
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature			
0.45 MPa, not annealed	136	°C	ISO 75-2/B
1.8 MPa, not annealed	131	°C	ISO 75-2/A
Linear thermal expansion coefficient			ASTM D696
Flow: -30 to 30°C	3.3E-5	cm/cm/°C	ASTM D696
Lateral: -30 to 30°C	3.6E-5	cm/cm/°C	ASTM D696
Specific Heat	1300	J/kg/°C	ASTM C351

Thermal Conductivity	4.0	W/m/K	ASTM C177

Flammability	Nominal Value	Test Method
Flame Rating (2.00 mm)	V-0	UL 94

Additional Information

The value listed as Thermal Conductivity, ASTM C177, was tested in accordance with ASTM E1461.The value listed as Mold Shrinkage, ASTM D955, was tested in accordance with ASTM D551.The value listed as Specific Heat ASTM C351, was tested in accordance with ASTM E1461.The value listed as Shear Modulus ISO 537, was tested in accordance with ISO 15310.Thermal Diffusivity, ASTM E1461: 0.025 cm^2/secEffective Shielding, ASTM D4935, 1G Hz: 55 dbPoisson's Ratio, ISO 527: 0.38

Injection	Nominal Value	Unit
Drying Temperature	150	°C
Drying Time	4.0	hr
Dew Point	-30.0	°C
Rear Temperature	280 - 290	°C
Middle Temperature	290 - 300	°C
Front Temperature	295 - 310	°C
Processing (Melt) Temp	295 - 310	°C
Mold Temperature	70.0 - 95.0	°C
Injection Pressure	75.0 - 150	MPa
Injection Rate	Moderate-Fast	
Holding Pressure	55.0 - 100	MPa
Back Pressure	0.100 - 0.400	MPa
Screw Speed	100 - 150	rpm
Screw Compression Ratio	2.0:1.0	

Injection instructions

Gate Size: 2.5mm minimum

Recommended distributors for this material

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