CoolPoly® E5109

Polyphenylene Sulfide

Celanese Corporation

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 characteristics.

General Information			
UL YellowCard	E229777-100055588		
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	1.71	g/cm³	ISO 1183
Molding Shrinkage			ASTM D955
Flow	0.25	%	ASTM D955
Transverse flow	0.45	%	ASTM D955
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	17500	MPa	ISO 527-2
Tensile Stress (Yield)	70.0	MPa	ISO 527-2
Nominal Tensile Strain at Break	0.42	%	ISO 527-2
Flexural Modulus	17500	MPa	ISO 178
Flexural Stress	129	MPa	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength	2.5	kJ/m²	ISO 179
Charpy Unnotched Impact Strength	7.0	kJ/m²	ISO 179
Thermal	**Nominal Value**	**Unit**	**Test Method**
Heat Deflection Temperature			
0.45 MPa, not annealed	280	°C	ISO 75-2/B
1.8 MPa, not annealed	267	°C	ISO 75-2/A
Linear thermal expansion coefficient			ASTM D696
Flow	1.8E-5	cm/cm/°C	ASTM D696
Lateral	2.1E-5	cm/cm/°C	ASTM D696
Specific Heat	963	J/kg/°C	ASTM C351

Thermal Conductivity	6.0	W/m/K	ASTM C177

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.Thermal Diffusivity, ASTM E1461: 0.03226 cm^2/sec

Injection	Nominal Value	Unit
Drying Temperature	150	°C
Drying Time	6.0	hr
Dew Point	-40.0	°C
Suggested Max Moisture	0.20	%
Rear Temperature	282 - 299	°C
Middle Temperature	288 - 307	°C
Front Temperature	293 - 321	°C
Nozzle Temperature	293 - 332	°C
Processing (Melt) Temp	293 - 332	°C
Mold Temperature	135 - 175	°C
Injection Pressure	60.0 - 165	MPa
Injection Rate	Slow-Moderate	
Holding Pressure	40.0 - 105	MPa
Back Pressure	0.200 - 0.500	MPa
Screw Speed	75 - 180	rpm
Cushion	5.00 - 13.0	mm
Screw Compression Ratio	2.5:1.0	

Recommended distributors for this material

Susheng Import & Export Trading Co.,Ltd.

Tel: +86 21 5895 8519

Phone: +86 13424755533

Email: sales@su-jiao.com

No. 215, Lianhe North Road, Fengxian District, Shanghai, China

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