CoolPoly® D5112

Polyphenylene Sulfide

Celanese Corporation

Message:

CoolPoly D 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 D series is electrically non-conductive and can be used for its dielectric properties.

General Information			
Features	Heat conduction Insulation Good formability		
RoHS Compliance	RoHS compliance		
Forms	Particle		
Processing Method	Injection molding		
Physical	**Nominal Value**	**Unit**	**Test Method**
Density	1.73	g/cm³	ISO 1183
Molding Shrinkage			ASTM D955
Flow	0.10	%	ASTM D955
Transverse flow	0.30	%	ASTM D955
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus	26200	MPa	ISO 527-2
Tensile Stress (Yield)	42.0	MPa	ISO 527-2
Nominal Tensile Strain at Break	0.23	%	ISO 527-2
Flexural Modulus	19800	MPa	ISO 178
Flexural Stress	77.0	MPa	ISO 178
Impact	**Nominal Value**	**Unit**	**Test Method**
Charpy Notched Impact Strength	1.2	kJ/m²	ISO 179
Charpy Unnotched Impact Strength	4.0	kJ/m²	ISO 179
Thermal	**Nominal Value**	**Unit**	**Test Method**
Specific Heat	949	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: 0.0353 cm²/sec

Injection	Nominal Value	Unit
Drying Temperature	150	°C
Drying Time	6.0	hr
Dew Point	-40.0	°C

Suggested Max Moisture	0.020	%
Rear Temperature	260 - 282	°C
Middle Temperature	300 - 320	°C
Front Temperature	310 - 340	°C
Nozzle Temperature	300 - 340	°C
Processing (Melt) Temp	305 - 340	°C
Mold Temperature	135 - 165	°C
Injection Pressure	60.0 - 165	MPa
Injection Rate	Moderate-Fast	
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	

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