

CoolPoly® D5502

Liquid Crystal Polymer

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	1.72	g/cm ³	ISO 1183
Molding Shrinkage			ASTM D955
Flow	0.10	%	ASTM D955
Transverse flow	0.20	%	ASTM D955
Water Absorption (23°C, 24 hr)	0.10	%	ISO 62
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	14800	MPa	ISO 527-2
Tensile Stress (Yield)	70.0	MPa	ISO 527-2
Nominal Tensile Strain at Break	0.64	%	ISO 527-2
Flexural Modulus	10200	MPa	ISO 178
Flexural Stress	101	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength	2.9	kJ/m ²	ISO 179
Charpy Unnotched Impact Strength	3.7	kJ/m ²	ISO 179
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (1.8 MPa, Unannealed)	260	°C	ISO 75-2/A
Specific Heat	1000	J/kg/°C	ASTM C351
Thermal Conductivity	1.5	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: 0.00843 cm ² /sec			
Injection	Nominal Value	Unit	
Drying Temperature	180	°C	

Drying Time	2.0 - 4.0	hr
Dew Point	-40.0	°C
Suggested Max Moisture	0.010	%
Rear Temperature	330 - 360	°C
Middle Temperature	340 - 370	°C
Front Temperature	345 - 380	°C
Nozzle Temperature	350 - 382	°C
Processing (Melt) Temp	349 - 393	°C
Mold Temperature	93.0 - 177	°C
Injection Pressure	35.0 - 70.0	MPa
Injection Rate	Fast	
Holding Pressure	7.00 - 35.0	MPa
Back Pressure	0.00 - 0.350	MPa
Screw Speed	75 - 150	rpm
Cushion	10.0 - 13.0	mm
Screw Compression Ratio	3.0:1.0	

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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

