

CoolPoly® D4302

Thermoplastic Copolyester Elastomer

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	1.47	g/cm ³	ISO 1183
Molding Shrinkage			ASTM D955
Flow	0.70	%	ASTM D955
Transverse flow	1.0	%	ASTM D955
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	73		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	4780	MPa	ISO 527-2
Tensile Stress (Yield)	40.0	MPa	ISO 527-2
Nominal Tensile Strain at Break	2.2	%	ISO 527-2
Flexural Modulus	3330	MPa	ISO 178
Flexural Stress	61.0	MPa	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength	3.0	kJ/m ²	ISO 179
Charpy Unnotched Impact Strength	25	kJ/m ²	ISO 179
Thermal	Nominal Value	Unit	Test Method
Specific Heat	1360	J/kg/°C	ASTM C351
Thermal Conductivity	2.3	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: 0.0118 cm ² /sec			
Injection	Nominal Value	Unit	
Drying Temperature	82.0	°C	

Drying Time	4.0	hr
Dew Point	-18.0	°C
Rear Temperature	200 - 210	°C
Middle Temperature	204 - 227	°C
Front Temperature	216 - 238	°C
Processing (Melt) Temp	216 - 238	°C
Mold Temperature	27.0 - 66.0	°C
Injection Pressure	35.0 - 82.0	MPa
Injection Rate	Moderate-Fast	
Holding Pressure	14.0 - 28.0	MPa
Back Pressure	0.00 - 0.350	MPa
Screw Speed	40 - 100	rpm
Screw Compression Ratio	2.5:1.0	

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