



CoolPoly® D5110

Celanese Corporation - Polyphenylene Sulfide

Tuesday, November 5, 2019

General Information

Product Description

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

Material Status	• Experimental: Active		
Availability	• Africa & Middle East	• Europe	• North America
	• Asia Pacific	• Latin America	
Features	• Electrically Insulating	• Thermally Conductive	
RoHS Compliance	• RoHS Compliant		
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density	1.63	g/cm ³	ISO 1183
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	2.00E+6	psi	ISO 527-2/1A
Tensile Stress (Break)	15100	psi	ISO 527-2/1A/5
Tensile Strain (Break)	1.2	%	ISO 527-2/1A/5
Flexural Modulus (73°F)	1.89E+6	psi	ISO 178
Flexural Stress (73°F)	24800	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength (73°F)	9.4	ft·lb/in ²	ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (66 psi, Unannealed)	536	°F	ISO 75-2/B
Heat Deflection Temperature (264 psi, Unannealed)	500	°F	ISO 75-2/A
Thermal Conductivity			ASTM E1461
-- ²	4.9	Btu·in/hr/ft ² /°F	
-- ³	9.0	Btu·in/hr/ft ² /°F	
-- ⁴	10	Btu·in/hr/ft ² /°F	
Electrical	Nominal Value	Unit	Test Method
Relative Permittivity (1 MHz)	3.60		IEC 60250
Dissipation Factor (1 MHz)	1.0E-3		IEC 60250
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.06 in)	V-0		UL 94

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	302	°F
Drying Time	4.0 to 6.0	hr
Rear Temperature	518 to 572	°F
Middle Temperature	527 to 581	°F
Front Temperature	536 to 581	°F

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Injection	Nominal Value	Unit
Nozzle Temperature	572 to 626	°F
Processing (Melt) Temp	572 to 626	°F
Mold Temperature	275 to 347	°F
Injection Rate	Slow-Moderate	
Back Pressure	< 102	psi

Injection Notes

Zone4 temperature: 295 to 315°C

Notes

¹ Typical properties: these are not to be construed as specifications.

² Thruplane

³ Crossflow

⁴ Flow