



CoolPoly® D5506

Celanese Corporation - Liquid Crystal Polymer

Sunday, November 3, 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	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North 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	1.75	g/cm ³	ISO 1183
Molding Shrinkage			ISO 294-4
Across Flow	0.30	%	
Flow	0.10	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	1.43E+6	psi	ISO 527-2/1A
Tensile Stress (Break)	7250	psi	ISO 527-2/1A/5
Tensile Strain (Break)	0.86	%	ISO 527-2/1A/5
Flexural Modulus (73°F)	1.96E+6	psi	ISO 178
Flexural Stress (73°F)	11500	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Unnotched Impact Strength (73°F)	3.3	ft-lb/in ²	ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (66 psi, Unannealed)	> 572	°F	ISO 75-2/B
Heat Deflection Temperature (264 psi, Unannealed)	505	°F	ISO 75-2/A
Thermal Conductivity			ASTM E1461
-- 2	13	Btu·in/hr/ft ² /°F	
-- 3	62	Btu·in/hr/ft ² /°F	
-- 4	65	Btu·in/hr/ft ² /°F	
Electrical	Nominal Value	Unit	Test Method
Relative Permittivity (1 MHz)	3.80		IEC 60250
Dissipation Factor (1 MHz)	0.022		IEC 60250
Flammability	Nominal Value	Unit	Test Method
Flame Rating (0.04 in)	V-0		UL 94

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	356	°F
Drying Time	2.0 to 4.0	hr

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Injection	Nominal Value	Unit
Rear Temperature	626 to 680	°F
Middle Temperature	635 to 689	°F
Front Temperature	644 to 698	°F
Nozzle Temperature	662 to 716	°F
Processing (Melt) Temp	662 to 743	°F
Mold Temperature	203 to 347	°F
Injection Rate	Fast	
Back Pressure	< 50.8	psi

Injection Notes

Zone4 temperature: 345 to 380°C

Notes

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

² Thruplane

³ Crossflow

⁴ Flow