



CoolPoly® E3609

Celanese Corporation - Polyamide 6

Monday, November 4, 2019

General Information

Product Description

CoolPoly E 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 E series is electrically conductive and provides inherent EMI/RFI shielding characteristics.

General

Material Status	• Commercial: Active		
Availability	• Africa & Middle East • Asia Pacific	• Europe • Latin America	• North America
Features	• Electrically Conductive • Electromagnetic Shielding (EMI)	• Radio Frequency Shielding (RFI) • Thermally Conductive	
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density	1.55	g/cm ³	ISO 1183
Molding Shrinkage			ISO 294-4
Across Flow	0.20	%	
Flow	0.20	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	1.02E+6	psi	ISO 527-2/1A
Tensile Stress (Break)	5220	psi	ISO 527-2/1A/5
Tensile Strain (Break)	0.70	%	ISO 527-2/1A/5
Flexural Modulus (73°F)	1.16E+6	psi	ISO 178
Flexural Stress (73°F)	9280	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			ISO 179/1eA
-22°F	0.90	ft-lb/in ²	
73°F	1.0	ft-lb/in ²	
Charpy Unnotched Impact Strength (73°F)	2.4	ft-lb/in ²	ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Heat Deflection Temperature (264 psi, Unannealed)	347	°F	ISO 75-2/A
Melting Temperature ²	428	°F	ISO 11357-3
CLTE - Flow	1.2E-5	in/in/°F	ISO 11359-2
CLTE - Transverse	2.9E-5	in/in/°F	ISO 11359-2
Thermal Conductivity			ASTM E1461
-- ³	28	Btu-in/hr/ft ² /°F	
-- ⁴	120	Btu-in/hr/ft ² /°F	
-- ⁵	170	Btu-in/hr/ft ² /°F	
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	2.0	ohms-cm	IEC 60093

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Processing Information

Injection	Nominal Value	Unit
Drying Temperature	176	°F
Drying Time	2.0 to 4.0	hr
Rear Temperature	410 to 464	°F
Middle Temperature	446 to 536	°F
Front Temperature	446 to 545	°F
Nozzle Temperature	419 to 536	°F
Processing (Melt) Temp	464 to 554	°F
Mold Temperature	77 to 185	°F
Injection Rate	Moderate-Fast	
Back Pressure	< 50.8	psi

Injection Notes

Zone4 temperature: 235 to 290°C

Notes

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

² 10°C/min

³ Thruplane

⁴ Crossflow

⁵ Flow