



CoolPoly® E3603

Celanese Corporation - Polyphthalamide

Tuesday, November 5, 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	
RoHS Compliance	• RoHS Compliant		
Processing Method	• Injection Molding		

ASTM & ISO Properties ¹

Physical	Nominal Value	Unit	Test Method
Density	1.59	g/cm ³	ISO 1183
Molding Shrinkage			ISO 294-4
Across Flow	0.60	%	
Flow	0.40	%	
Mechanical	Nominal Value	Unit	Test Method
Tensile Modulus	1.45E+6	psi	ISO 527-2/1A
Tensile Stress (Break)	7250	psi	ISO 527-2/1A/5
Tensile Strain (Break)	0.55	%	ISO 527-2/1A/5
Flexural Modulus (73°F)	1.52E+6	psi	ISO 178
Flexural Stress (73°F)	11600	psi	ISO 178
Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength (73°F)	0.95	ft·lb/in ²	ISO 179/1eA
Charpy Unnotched Impact Strength (73°F)	2.4	ft·lb/in ²	ISO 179/1eU
Thermal	Nominal Value	Unit	Test Method
Thermal Conductivity			ASTM E1461
-- 2	25	Btu·in/hr/ft ² /°F	
-- 3	120	Btu·in/hr/ft ² /°F	
-- 4	150	Btu·in/hr/ft ² /°F	
Electrical	Nominal Value	Unit	Test Method
Volume Resistivity	1.2	ohms·cm	IEC 60093

Processing Information

Injection	Nominal Value	Unit
Drying Temperature	171 to 189	°F
Drying Time	2.0 to 4.0	hr
Rear Temperature	601	°F
Middle Temperature	624	°F
Front Temperature	630	°F

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Injection	Nominal Value	Unit
Nozzle Temperature	646	°F
Processing (Melt) Temp	635 to 646	°F
Mold Temperature	244 to 255	°F

Injection Notes

Feeding zone temperature: 40 to 47°C

Notes

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

² Thruplane

³ Crossflow

⁴ Flow