



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 | • Europe | • North America |
| | • Asia Pacific | • Latin America | |
| Features | • Electrically Conductive | • Radio Frequency Shielding (RFI) | |
| | • Electromagnetic Shielding (EMI) | • Thermally Conductive | |
| RoHS Compliance | • RoHS Compliant | | |
| Processing Method | • Injection Molding | | |

ASTM & ISO Properties¹

| 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