

Premix Thermoplastics PRE-ELEC® PET 1451

Category : Polymer , Thermoplastic , Polyester, TP , Polyethylene Terephthalate (PET)

Material Notes:

PRE-ELEC PET 1451 is a conductive thermoplastic compound based on PETG. Conductivity is achieved by using special conductive carbon black. In addition to a low electrical resistivity PRE-ELEC PET 1451 has excellent mechanical properties and is easy to extrude. Typical applications include extruded and co-extruded sheets for thermoforming of trays and micro chip carrier tape. Information provided by Premix Thermoplastics Inc.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Premix-Thermoplastics-PRE-ELEC-PET-1451.php

| Physical Properties | Metric | English | Comments |
|-----------------------|--|--|--|
| Density | 1.33 g/cc | 0.0480 lb/in ³ | |
| Linear Mold Shrinkage | 0.0040 - 0.0060 cm/cm | 0.0040 - 0.0060 in/in | 4 mm thick, 10.0 mm wide molded rod; ISO 294-4 |
| Melt Flow | 4.0 g/10 min @Load 5.00 kg, Temperature 200 °C | 4.0 g/10 min @Load 11.0 lb, Temperature 392 °F | ISO 1133 |
| High Load Melt Index | 28 g/10 min @Load 21.6 kg, Temperature 200 °C | 28 g/10 min @Load 47.6 lb, Temperature 392 °F | ISO 1133 |

| Mechanical Properties | Metric | English | Comments |
|------------------------------------|---|--|---|
| Film Tensile Strength at Yield, MD | 32.0 MPa | 4640 psi | ISO 527 |
| Film Elongation at Break, MD | 44 % | 44 % | ISO 527 |
| Film Elongation at Yield, MD | 4.0 % | 4.0 % | ISO 527 |
| Modulus of Elasticity | 2.60 GPa | 377 ksi | 4 mm thick;10.0 mm wide molded rod; ISO 178 |
| Izod Impact, Notched | 1.20 J/cm @Thickness 4.00 mm, Temperature 23.0 °C | 2.25 ft-lb/in @Thickness 0.157 in, Temperature 73.4 °F | ISO 180 |
| Izod Impact, Unnotched | NB @Thickness 4.00 mm, Temperature 23.0 °C | NB @Thickness 0.157 in, Temperature 73.4 °F | ISO 180 |
| Film Tensile Strength at Break, MD | 31.0 MPa | 4500 psi | ISO 527 |

| Thermal Properties | Metric | English | Comments |
|--------------------|--------|---------|----------|
|--------------------|--------|---------|----------|

| Thermal Properties | Metric | English | Comments |
|---|---------|---------|---|
| Deflection Temperature at 0.46 MPa (69 psi) | 70.0 °C | 158 °F | 4 mm thick;10.0 mm wide molded rod; ISO 75/Method Bf |
| Deflection Temperature at 1.8 MPa (264 psi) | 64.0 °C | 147 °F | 4 mm thick;10.0 mm wide molded rod; ISO 75/Method Af |
| Vicat Softening Point | 70.0 °C | 158 °F | Rate A; 4 mm thick;10.0 mm wide molded rod; ISO 306/A50 |
| | 75.0 °C | 167 °F | Rate B; 4 mm thick;10.0 mm wide molded rod; ISO 306/B50 |

| Electrical Properties | Metric | English | Comments |
|-----------------------|----------------|----------------|-------------------------------|
| Volume Resistivity | <= 1000 ohm-cm | <= 1000 ohm-cm | 400 um thick sheet; ISO D-257 |
| Surface Resistance | <= 10000 ohm | <= 10000 ohm | 400 um thick sheet; ISO D-257 |

| Processing Properties | Metric | English | Comments |
|---------------------------|-----------------|-----------------|---------------------------|
| Middle Barrel Temperature | 210 °C | 410 °F | Zone 1; Cylinder |
| | 220 °C | 428 °F | Zone 4; Cylinder |
| | 220 °C | 428 °F | Zone 5; Cylinder |
| | 220 °C | 428 °F | Zone 2; Cylinder |
| | 220 °C | 428 °F | Zone 3; Cylinder |
| | 230 °C | 446 °F | Zone 6; Cylinder |
| Die Temperature | 215 °C | 419 °F | Zone 3 |
| | 225 °C | 437 °F | Zone 2 |
| | 225 °C | 437 °F | Zone 4 |
| | 230 °C | 446 °F | Zone 5 |
| | 230 °C | 446 °F | Zone 1 |
| Roll Temperature | 60.0 °C | 140 °F | 3rd Roll |
| | 80.0 °C | 176 °F | 2nd Roll |
| | 90.0 °C | 194 °F | 1st Roll |
| Drying Temperature | 65.0 °C | 149 °F | Pre-drying |
| | @Time 14400 sec | @Time 4.00 hour | |
| Moisture Content | <= 0.15 % | <= 0.15 % | When Produced |
| Shelf Life | 12.0 Month | 12.0 Month | Normal Storing Conditions |

| Descriptive Properties | Value | Comments |
|------------------------|---------|----------|
| Appearance | Granule | |
| Color | Black | |

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