

DuPont Performance Polymers Zytel® 330 NC010 Nylon (Unverified Data**)

Category : Polymer , Thermoplastic , Nylon

Material Notes:

Unreinforced Polyamide Zytel 330 NC010 is a transparent polyamide resin with amorphous characteristics. Information provided by DuPont Performance Polymers

Order this product through the following link:

http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Zytel-330-NC010-Nylon-nbspUnverified-Data.php

| Physical Properties | Metric | English | Comments |
|-----------------------------------|--|--|------------------------|
| Density | 1.18 g/cc | 0.0426 lb/in ³ | DAM; ISO 1183 |
| Water Absorption | 5.8 % @Thickness 2.00 mm | 5.8 % @Thickness 0.0787 in | DAM; Sim. to ISO 62 |
| Viscosity | 44000 cP @Shear Rate 5000 1/s, Temperature 320 °C | 44000 cP @Shear Rate 5000 1/s, Temperature 608 °F | ISO 11403-1 -2 |
| | 70000 cP @Shear Rate 500 1/s, Temperature 320 °C | 70000 cP @Shear Rate 500 1/s, Temperature 608 °F | ISO 11403-1 -2 |
| | 72000 cP @Shear Rate 5000 1/s, Temperature 300 °C | 72000 cP @Shear Rate 5000 1/s, Temperature 572 °F | ISO 11403-1 -2 |
| | 122000 cP @Shear Rate 5000 1/s, Temperature 280 °C | 122000 cP @Shear Rate 5000 1/s, Temperature 536 °F | ISO 11403-1 -2 |
| | 127000 cP @Shear Rate 500 1/s, Temperature 300 °C | 127000 cP @Shear Rate 500 1/s, Temperature 572 °F | ISO 11403-1 -2 |
| | 243000 cP @Shear Rate 500 1/s, Temperature 280 °C | 243000 cP @Shear Rate 500 1/s, Temperature 536 °F | ISO 11403-1 -2 |
| Viscosity Test | 80 cm ³ /g | 80 cm ³ /g | DAM; ISO 307 1157 1628 |
| Linear Mold Shrinkage, Flow | 0.0050 cm/cm | 0.0050 in/in | DAM; ISO 294-4 2577 |
| Linear Mold Shrinkage, Transverse | 0.0040 cm/cm | 0.0040 in/in | DAM; ISO 294-4 2577 |

| Mechanical Properties | Metric | English | Comments |
|-------------------------|----------|-----------|-------------------|
| Tensile Strength, Yield | 97.0 MPa | 14100 psi | DAM; ISO 527-1/-2 |

| Mechanical Properties <i>Elongation at Break</i> | Metric <i>± 50 %</i> | English <i>± 50 %</i> | Comments <i>DAM, Nominal; ISO 527-1/-2</i> |
|---|-------------------------|----------------------------|---|
| Elongation at Yield | 6.0 % | 6.0 % | DAM; ISO 527-1/-2 |
| Tensile Modulus | 1.30 GPa | 189 ksi | 50%RH; ISO 527-1/-2 |
| | 2.40 GPa | 348 ksi | DAM; ISO 527-1/-2 |
| | 0.000701 GPa | 0.102 ksi | 50%RH; Dynamic; ISO 11403-1 -2 |
| | @Temperature 170 °C | @Temperature 338 °F | |
| | 0.00208 GPa | 0.302 ksi | DAM; Dynamic; ISO 11403-1 -2 |
| | @Temperature 170 °C | @Temperature 338 °F | |
| | 0.0387 GPa | 5.61 ksi | 50%RH; Dynamic; ISO 11403-1 -2 |
| | @Temperature 110 °C | @Temperature 230 °F | |
| | 1.27 GPa | 184 ksi | 50%RH; Dynamic; ISO 11403-1 -2 |
| | @Temperature 30.0 °C | @Temperature 86.0 °F | |
| | 1.40 GPa | 202 ksi | 50%RH; Dynamic; ISO 11403-1 -2 |
| | @Temperature -20.0 °C | @Temperature -4.00 °F | |
| | 1.4027 GPa | 203.44 ksi | DAM; Dynamic; ISO 11403-1 -2 |
| | @Temperature 110 °C | @Temperature 230 °F | |
| | 1.58 GPa | 230 ksi | DAM; Dynamic; ISO 11403-1 -2 |
| | @Temperature 30.0 °C | @Temperature 86.0 °F | |
| | 1.70 GPa | 246 ksi | 50%RH; Dynamic; ISO 11403-1 -2 |
| | @Temperature -70.0 °C | @Temperature -94.0 °F | |
| | 1.72 GPa | 250 ksi | DAM; Dynamic; ISO 11403-1 -2 |
| | @Temperature -20.0 °C | @Temperature -4.00 °F | |
| | 1.96 GPa | 284 ksi | 50%RH; Dynamic; ISO 11403-1 -2 |
| | @Temperature -100 °C | @Temperature -148 °F | |
| | 2.06 GPa | 299 ksi | DAM; Dynamic; ISO 11403-1 -2 |
| | @Temperature -70.0 °C | @Temperature -94.0 °F | |
| | 2.24 GPa | 325 ksi | DAM; Dynamic; ISO 11403-1 -2 |
| | @Temperature -100 °C | @Temperature -148 °F | |
| Izod Impact, Notched (ISO) | 8.00 kJ/m ² | 3.81 ft-lb/in ² | DAM; ISO 180/1A |
| Charpy Impact Unnotched | 18.0 J/cm ² | 85.7 ft-lb/in ² | DAM; ISO 179/1eU |

| Mechanical Properties | Metric | English | Comments |
|------------------------|--|---|--------------------|
| | 18.0 J/cm ² @Temperature -30.0 °C | 85.7 ft-lb/in ² @Temperature -22.0 °F | DAM; ISO 179/1eU |
| | 23.0 J/cm ² @Temperature -40.0 °C | 109 ft-lb/in ² @Temperature -40.0 °F | DAM; ISO 179/1eU |
| Charpy Impact, Notched | 0.990 J/cm ² | 4.71 ft-lb/in ² | DAM; ISO 179/1eA |
| | 1.20 J/cm ² | 5.71 ft-lb/in ² | 50%RH; ISO 179/1eA |
| | 0.450 J/cm ² @Temperature -30.0 °C | 2.14 ft-lb/in ² @Temperature -22.0 °F | DAM; ISO 179/1eA |
| | 0.450 J/cm ² @Temperature -40.0 °C | 2.14 ft-lb/in ² @Temperature -40.0 °F | DAM; ISO 179/1eA |
| Puncture Energy | 37.0 J @Load 377 kg | 27.3 ft-lb @Load 832 lb | 50%RH; ISO 6603-2 |
| | 70.0 J @Load 561 kg | 51.6 ft-lb @Load 1240 lb | DAM; ISO 6603-2 |
| | 19.0 J @Load 316 kg, Temperature -30.0 °C | 14.0 ft-lb @Load 697 lb, Temperature -22.0 °F | 50%RH; ISO 6603-2 |
| | 47.0 J @Load 438 kg, Temperature -30.0 °C | 34.7 ft-lb @Load 967 lb, Temperature -22.0 °F | DAM; ISO 6603-2 |

| Thermal Properties | Metric | English | Comments |
|---|--------------|------------------------------------|-------------------------------|
| CTE, linear, Parallel to Flow | 62.0 µm/m-°C | 34.4 µin/in-°F | DAM; ISO 11359-1/-2 |
| CTE, linear, Transverse to Flow | 60.0 µm/m-°C | 33.3 µin/in-°F | DAM; ISO 11359-1/-2 |
| Specific Heat Capacity | 2.46 J/g-°C | 0.588 BTU/lb-°F | |
| Thermal Conductivity | 0.220 W/m-K | 1.53 BTU-in/hr-ft ² -°F | of melt |
| Deflection Temperature at 0.46 MPa (66 psi) | 127 °C | 261 °F | DAM; ISO 75-1/-2 |
| Deflection Temperature at 1.8 MPa (264 psi) | 123 °C | 253 °F | DAM; ISO 75-1/-2 |
| Glass Transition Temp, Tg | 140 °C | 284 °F | DAM; 10°C/min; ISO 11357-1/-2 |

| Thermal Properties | HB Metric | HB English | Comments |
|--------------------|---------------------|----------------------|----------------------|
| | @Thickness 1.50 mm | @Thickness 0.0591 in | 9695-11-10 |
| | V-2 | V-2 | DAM; IEC 60695-11-10 |
| | @Thickness 0.900 mm | @Thickness 0.0354 in | |

| Optical Properties | Metric | English | Comments |
|-----------------------|--------|---------|----------------|
| Transmission, Visible | 88 % | 88 % | ISO 13468-1 -2 |

| Electrical Properties | Metric | English | Comments |
|----------------------------|-----------------------|-----------------------|--------------------|
| Volume Resistivity | 1.00e+15 ohm-cm | 1.00e+15 ohm-cm | DAM; IEC 60093 |
| | 1.00e+15 ohm-cm | 1.00e+15 ohm-cm | 50%RH; IEC 60093 |
| Dielectric Constant | 3.7 | 3.7 | DAM; IEC 60250 |
| | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz | |
| | 3.8 | 3.8 | 50%RH; IEC 60250 |
| | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz | |
| | 4.1 | 4.1 | DAM; IEC 60250 |
| | @Frequency 100 Hz | @Frequency 100 Hz | |
| | 4.3 | 4.3 | 50%RH; IEC 60250 |
| | @Frequency 100 Hz | @Frequency 100 Hz | |
| Dielectric Strength | 28.0 kV/mm | 711 kV/in | 50%RH; IEC 60243-1 |
| | 29.0 kV/mm | 737 kV/in | DAM; IEC 60243-1 |
| Dissipation Factor | 0.020 | 0.020 | DAM; IEC 60250 |
| | @Frequency 100 Hz | @Frequency 100 Hz | |
| | 0.020 | 0.020 | 50%RH; IEC 60250 |
| | @Frequency 100 Hz | @Frequency 100 Hz | |
| | 0.020 | 0.020 | DAM; IEC 60250 |
| | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz | |
| | 0.020 | 0.020 | 50%RH; IEC 60250 |
| | @Frequency 1.00e+6 Hz | @Frequency 1.00e+6 Hz | |
| Comparative Tracking Index | 600 V | 600 V | DAM; IEC 60112 |

| Electrical Properties | Metric | English | Comments |
|-------------------------|-----------------------------------|---------|-----------|
| Descriptive Properties | Value | | Comments |
| Delivery Form | Pellets | | |
| Part Marking Code | >PA< | | ISO 11469 |
| Processing | Injection Moulding | | |
| Regional Availability | Europe | | |
| | Near East/Africa | | |
| | North America | | |
| | South and Central America | | |
| Resin Identification | PA | | |
| Special Characteristics | Heat stabilised or stable to heat | | |
| | Transparent | | |

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