# DuPont Performance Polymers Zytel® HTN 51G15HSL NC010 Polyphthalamide (PPA) (Unverified Data**)

**Category :** Polymer , Thermoplastic , Polyphthalamide (PPA) , Polyphthalamide (PPA), 20% Glass Fiber Reinforced

**Material Notes:**

15% Glass Reinforced PPA High Performance Polyamide Zytel HTN51G15HSL NC010 is a 15% glass reinforced heat stabilized lubricated high performance polyamide resin. It is also a PPA resin.Information provided by DuPont Performance Polymers

Order this product through the following link:
http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Zytel-HTN-51G15HSL-NC010-Polyphthalamide-PPA-nbspUnverified-Data.php

| Physical Properties | Metric | English | Comments |
|---|---|---|---|
| Density | 1.30 g/cc | 0.0470 lb/in³ | DAM; ISO 1183 |
| Linear Mold Shrinkage, Flow | 0.0040 cm/cm | 0.0040 in/in | DAM; ISO 294-4 2577 |
| Linear Mold Shrinkage, Transverse | 0.010 cm/cm | 0.010 in/in | DAM; ISO 294-4 2577 |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| Tensile Strength at Break | 120 MPa | 17400 psi | DAM; ISO 527-1/-2 |
| Tensile Stress | 7.27 MPa<br>@Strain 0.100 %, Temperature 23.0 °C | 1050 psi<br>@Strain 0.100 %, Temperature 73.4 °F | DAM; ISO 11403-1 -2 |
| | 15.35 MPa<br>@Strain 0.500 %, Temperature 150 °C | 2226 psi<br>@Strain 0.500 %, Temperature 302 °F | DAM; ISO 11403-1 -2 |
| | 24.36 MPa<br>@Strain 0.900 %, Temperature 150 °C | 3533 psi<br>@Strain 0.900 %, Temperature 302 °F | DAM; ISO 11403-1 -2 |
| | 30.53 MPa<br>@Strain 1.30 %, Temperature 150 °C | 4428 psi<br>@Strain 1.30 %, Temperature 302 °F | DAM; ISO 11403-1 -2 |
| | 36.63 MPa<br>@Strain 0.500 %, Temperature -40.0 °C | 5313 psi<br>@Strain 0.500 %, Temperature -40.0 °F | DAM; ISO 11403-1 -2 |
| | 39.59 MPa<br>@Strain 0.600 %, Temperature 23.0 °C | 5742 psi<br>@Strain 0.600 %, Temperature 73.4 °F | DAM; ISO 11403-1 -2 |
| | 39.81 MPa | 5774 psi | DAM; ISO 11403-1 -2 |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| | @Strain 2.40 %, Temperature 150 °C | @Strain 2.40 %, Temperature 302 °F | |
| | 57.82 MPa<br>@Strain 0.900 %, Temperature 23.0 °C | 8386 psi<br>@Strain 0.900 %, Temperature 73.4 °F | DAM; ISO 11403-1 -2 |
| | 75.35 MPa<br>@Strain 1.20 %, Temperature 23.0 °C | 10930 psi<br>@Strain 1.20 %, Temperature 73.4 °F | DAM; ISO 11403-1 -2 |
| | 77.8 MPa<br>@Strain 1.10 %, Temperature -40.0 °C | 11300 psi<br>@Strain 1.10 %, Temperature -40.0 °F | DAM; ISO 11403-1 -2 |
| | 97.15 MPa<br>@Strain 1.40 %, Temperature -40.0 °C | 14090 psi<br>@Strain 1.40 %, Temperature -40.0 °F | DAM; ISO 11403-1 -2 |
| | 114.97 MPa<br>@Strain 1.70 %, Temperature -40.0 °C | 16675 psi<br>@Strain 1.70 %, Temperature -40.0 °F | DAM; ISO 11403-1 -2 |
| Elongation at Break | 2.1 % | 2.1 % | DAM; ISO 527-1/-2 |
| Tensile Modulus | 6.50 GPa | 943 ksi | DAM; ISO 527-1/-2 |
| Flexural Modulus | 5.70 GPa | 827 ksi | DAM; ISO 178 |
| Secant Modulus | 4.63 GPa<br>@Strain 2.20 %, Temperature 100 °C | 672 ksi<br>@Strain 2.20 %, Temperature 212 °F | DAM; ISO 11403-1 -2 |
| | 5.12 GPa<br>@Strain 1.80 %, Temperature 100 °C | 742 ksi<br>@Strain 1.80 %, Temperature 212 °F | DAM; ISO 11403-1 -2 |
| | 5.87 GPa<br>@Strain 1.20 %, Temperature 100 °C | 851 ksi<br>@Strain 1.20 %, Temperature 212 °F | DAM; ISO 11403-1 -2 |
| | 5.95 GPa<br>@Strain 1.80 %, Temperature 23.0 °C | 863 ksi<br>@Strain 1.80 %, Temperature 73.4 °F | DAM; ISO 11403-1 -2 |
| | 6.18 GPa<br>@Strain 1.40 %, Temperature 23.0 °C | 896 ksi<br>@Strain 1.40 %, Temperature 73.4 °F | DAM; ISO 11403-1 -2 |
| | 6.32 GPa<br>@Strain 0.700 %, | 917 ksi<br>@Strain 0.700 %, | DAM; ISO 11403-1 -2 |

| Mechanical Properties | Metric | English | Comments |
|---|---|---|---|
| | Temperature 100 °C<br>6.378 GPa<br>@Strain 1.00 %,<br>Temperature 23.0 °C | Temperature 212 °F<br>925.1 ksi<br>@Strain 1.00 %,<br>Temperature 73.4 °F | DAM; ISO 11403-1 -2 |
| | 6.56 GPa<br>@Strain 1.90 %,<br>Temperature -40.0 °C | 951 ksi<br>@Strain 1.90 %,<br>Temperature -40.0 °F | DAM; ISO 11403-1 -2 |
| | 6.60 GPa<br>@Strain 0.600 %,<br>Temperature 23.0 °C | 957 ksi<br>@Strain 0.600 %,<br>Temperature 73.4 °F | DAM; ISO 11403-1 -2 |
| | 6.665 GPa<br>@Strain 0.200 %,<br>Temperature 100 °C | 966.7 ksi<br>@Strain 0.200 %,<br>Temperature 212 °F | DAM; ISO 11403-1 -2 |
| | 6.89 GPa<br>@Strain 1.50 %,<br>Temperature -40.0 °C | 999 ksi<br>@Strain 1.50 %,<br>Temperature -40.0 °F | DAM; ISO 11403-1 -2 |
| | 7.07 GPa<br>@Strain 1.10 %,<br>Temperature -40.0 °C | 1030 ksi<br>@Strain 1.10 %,<br>Temperature -40.0 °F | DAM; ISO 11403-1 -2 |
| | 7.27 GPa<br>@Strain 0.100 %,<br>Temperature 23.0 °C | 1050 ksi<br>@Strain 0.100 %,<br>Temperature 73.4 °F | DAM; ISO 11403-1 -2 |
| | 7.326 GPa<br>@Strain 0.500 %,<br>Temperature -40.0 °C | 1063 ksi<br>@Strain 0.500 %,<br>Temperature -40.0 °F | DAM; ISO 11403-1 -2 |
| Izod Impact, Notched (ISO) | 6.00 kJ/m² | 2.86 ft-lb/in² | DAM; ISO 180/1A |
| | 6.00 kJ/m²<br>@Temperature -40.0 °C | 2.86 ft-lb/in²<br>@Temperature -40.0 °F | DAM; ISO 180/1A |
| Charpy Impact Unnotched | 2.50 J/cm² | 11.9 ft-lb/in² | DAM; ISO 179/1eU |
| Charpy Impact, Notched | 0.600 J/cm² | 2.86 ft-lb/in² | DAM; ISO 179/1eA |
| | 0.600 J/cm²<br>@Temperature -30.0 °C | 2.86 ft-lb/in²<br>@Temperature -22.0 °F | DAM; ISO 179/1eA |

| Thermal Properties | Metric | English | Comments |
|---|---|---|---|
| CTE, linear, Parallel to Flow | 30.0 µm/m-°C | 16.7 µin/in-°F | DAM; ISO 11359-1/-2 |
| | 57.0 µm/m-°C | 31.7 µin/in-°F | |

| Thermal Properties | Metric | English | Comments |
|---|---|---|---|
| | @Temperature -40.0 - 23.0 °C | @Temperature -40.0 - 73.4 °F | DAM; ISO 11359-1/-2 |
| CTE, linear, Transverse to Flow | 64.0 µm/m-°C | 35.6 µin/in-°F | DAM; ISO 11359-1/-2 |
| | 30.0 µm/m-°C<br>@Temperature -40.0 - 23.0 °C | 16.7 µin/in-°F<br>@Temperature -40.0 - 73.4 °F | DAM; ISO 11359-1/-2 |
| | 77.0 µm/m-°C<br>@Temperature 55.0 - 160 °C | 42.8 µin/in-°F<br>@Temperature 131 - 320 °F | DAM; ISO 11359-1/-2 |
| Melting Point | 300 °C | 572 °F | DAM; first heat; ISO 11357-1/-3 |
| Deflection Temperature at 0.46 MPa (66 psi) | 276 °C | 529 °F | DAM; ISO 75-1/-2 |
| Deflection Temperature at 1.8 MPa (264 psi) | 254 °C | 489 °F | DAM; ISO 75-1/-2 |
| Flammability, UL94 | HB<br>@Thickness 1.50 mm | HB<br>@Thickness 0.0591 in | DAM; IEC 60695-11-10 |
| | HB<br>@Thickness 0.800 mm | HB<br>@Thickness 0.0315 in | DAM; IEC 60695-11-10 |
| Oxygen Index | 23 % | 23 % | DAM; ISO 4589-1/-2 |

| Electrical Properties | Metric | English | Comments |
|---|---|---|---|
| Volume Resistivity | >= 1.00e+15 ohm-cm | >= 1.00e+15 ohm-cm | DAM; IEC 60093 |
| Surface Resistance | >= 1.00e+15 ohm | >= 1.00e+15 ohm | 50%RH; IEC 60093 |
| Comparative Tracking Index | 600 V | 600 V | DAM; IEC 60112 |

| Descriptive Properties | Value | Comments |
|---|---|---|
| Additives | Lubricants | |
| | Release agent | |
| Delivery Form | Pellets | |
| Part Marking Code | >PA6T/XT-GF15< | ISO 11469 |
| | >PPA-GF15< | SAE J1344 |
| Processing | Injection Moulding | |
| Regional Availability | Asia Pacific | |

| Descriptive Properties | Value | Comments |
|---|---|---|
| | Global | |
| | Near East/Africa | |
| | North America | |
| | South and Central America | |
| Special Characteristics | Heat stabilised or stable to heat | |
| UL recognition | UL | DAM |

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