

## DuPont Performance Polymers Zytel® HTN 54G15HSLR NC010 Polyphthalamide (PPA) (Unverified Data\*\*)

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

### Material Notes:

15% Glass Reinforced Toughened PPA High Performance Polyamide Zytel HTN54G15HSLR NC010 is a 15% glass reinforced toughened heat stabilized hydrolysis resistant high performance polyamide resin. It is 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-54G15HSLR-NC010-Polyphthalamide-PPA-nbspUnverified-Data.php](http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Zytel-HTN-54G15HSLR-NC010-Polyphthalamide-PPA-nbspUnverified-Data.php)

Physical Properties	Metric	English	Comments
Density	1.25 g/cc	0.0452 lb/in <sup>3</sup>	DAM; ISO 1183
Linear Mold Shrinkage, Flow	0.0040 cm/cm	0.0040 in/in	DAM; ISO 294-4 2577
Linear Mold Shrinkage, Transverse	0.0070 cm/cm	0.0070 in/in	DAM; ISO 294-4 2577

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	100 MPa	14500 psi	50%RH; ISO 527-1/-2
	130 MPa	18900 psi	DAM; ISO 527-1/-2
Tensile Stress	2.45 MPa	355 psi	DAM; ISO 11403-1 -2
	@Strain 0.100 %, Temperature 150 °C	@Strain 0.100 %, Temperature 302 °F	
	4.73 MPa	686 psi	DAM; ISO 11403-1 -2
	@Strain 0.100 %, Temperature 23.0 °C	@Strain 0.100 %, Temperature 73.4 °F	
	5.02 MPa	728 psi	DAM; ISO 11403-1 -2
	@Strain 0.100 %, Temperature -40.0 °C	@Strain 0.100 %, Temperature -40.0 °F	
	7.92 MPa	1150 psi	DAM; ISO 11403-1 -2
	@Strain 0.400 %, Temperature 150 °C	@Strain 0.400 %, Temperature 302 °F	
	13.94 MPa	2022 psi	DAM; ISO 11403-1 -2
	@Strain 0.700 %, Temperature 150 °C	@Strain 0.700 %, Temperature 302 °F	
	18.24 MPa	2645 psi	DAM; ISO 11403-1 -2
	@Strain 0.400 %, Temperature 23.0 °C	@Strain 0.400 %, Temperature 73.4 °F	

Mechanical Properties	18.85 MPa Metric	2734 psi English	Comments DAM; ISO 11403-1 -2
	@Strain 0.400 %, Temperature -40.0 °C	@Strain 0.400 %, Temperature -40.0 °F	
	<b>18.99 MPa</b>	<b>2754 psi</b>	
	@Strain 1.00 %, Temperature 150 °C	@Strain 1.00 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	<b>29.48 MPa</b>	<b>4276 psi</b>	
	@Strain 1.90 %, Temperature 150 °C	@Strain 1.90 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	<b>33.54 MPa</b>	<b>4865 psi</b>	
	@Strain 2.40 %, Temperature 150 °C	@Strain 2.40 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	<b>33.77 MPa</b>	<b>4898 psi</b>	
	@Strain 0.700 %, Temperature 23.0 °C	@Strain 0.700 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	<b>34.94 MPa</b>	<b>5068 psi</b>	
	@Strain 0.700 %, Temperature -40.0 °C	@Strain 0.700 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	<b>37.3 MPa</b>	<b>5410 psi</b>	
	@Strain 3.00 %, Temperature 150 °C	@Strain 3.00 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	<b>39.13 MPa</b>	<b>5675 psi</b>	
	@Strain 3.40 %, Temperature 150 °C	@Strain 3.40 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	<b>40.8 MPa</b>	<b>5920 psi</b>	
	@Strain 3.90 %, Temperature 150 °C	@Strain 3.90 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	<b>42.88 MPa</b>	<b>6219 psi</b>	
	@Strain 4.70 %, Temperature 150 °C	@Strain 4.70 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	<b>43.11 MPa</b>	<b>6253 psi</b>	
	@Strain 4.80 %, Temperature 150 °C	@Strain 4.80 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	<b>45.5 MPa</b>	<b>6600 psi</b>	
	@Strain 7.00 %, Temperature 150 °C	@Strain 7.00 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	<b>46.44 MPa</b>	<b>6736 psi</b>	
	@Strain 10.0 %,	@Strain 10.0 %,	DAM; ISO 11403-1 -2

Mechanical Properties	Temperature 150 °C Metric	Temperature 302 °F English	Comments
	47.96 MPa @Strain 1.00 %, Temperature 23.0 °C	6956 psi @Strain 1.00 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	50.14 MPa @Strain 1.00 %, Temperature -40.0 °C	7272 psi @Strain 1.00 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	85.99 MPa @Strain 1.90 %, Temperature 23.0 °C	12470 psi @Strain 1.90 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	90.8 MPa @Strain 1.90 %, Temperature -40.0 °C	13200 psi @Strain 1.90 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	102.61 MPa @Strain 2.40 %, Temperature 23.0 °C	14882 psi @Strain 2.40 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	110.52 MPa @Strain 2.40 %, Temperature -40.0 °C	16030 psi @Strain 2.40 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	116.99 MPa @Strain 3.00 %, Temperature 23.0 °C	16968 psi @Strain 3.00 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	123.08 MPa @Strain 3.40 %, Temperature 23.0 °C	17851 psi @Strain 3.40 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
Elongation at Break	2.7 %	2.7 %	50%RH; ISO 527-1/-2
	3.7 %	3.7 %	DAM; ISO 527-1/-2
Tensile Modulus	5.50 GPa	798 ksi	50%RH; ISO 527-1/-2
	5.60 GPa	812 ksi	DAM; ISO 527-1/-2
Flexural Modulus	4.90 GPa	711 ksi	DAM; ISO 178
Secant Modulus	2.7555 GPa @Strain 2.00 %, Temperature 100 °C	399.66 ksi @Strain 2.00 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	3.02 GPa @Strain 1.60 %, Temperature 100 °C	438 ksi @Strain 1.60 %, Temperature 212 °F	DAM; ISO 11403-1 -2

Mechanical Properties	Metric GPa	English ksi	Comments
	@Strain 1.20 %, Temperature 100 °C	@Strain 1.20 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	<b>3.3225 GPa</b>	<b>481.90 ksi</b>	
	@Strain 0.400 %, Temperature 100 °C	@Strain 0.400 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	<b>3.44 GPa</b>	<b>498 ksi</b>	
	@Strain 0.800 %, Temperature 100 °C	@Strain 0.800 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	<b>3.90 GPa</b>	<b>566 ksi</b>	
	@Strain 0.100 %, Temperature 100 °C	@Strain 0.100 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	<b>4.484 GPa</b>	<b>650.4 ksi</b>	
	@Strain 2.00 %, Temperature 23.0 °C	@Strain 2.00 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	<b>4.56 GPa</b>	<b>661 ksi</b>	
	@Strain 0.400 %, Temperature 23.0 °C	@Strain 0.400 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	<b>4.65 GPa</b>	<b>675 ksi</b>	
	@Strain 1.60 %, Temperature 23.0 °C	@Strain 1.60 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	<b>4.7125 GPa</b>	<b>683.50 ksi</b>	
	@Strain 0.400 %, Temperature -40.0 °C	@Strain 0.400 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	<b>4.73 GPa</b>	<b>686 ksi</b>	
	@Strain 0.100 %, Temperature 23.0 °C	@Strain 0.100 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	<b>4.746 GPa</b>	<b>688.4 ksi</b>	
	@Strain 2.00 %, Temperature -40.0 °C	@Strain 2.00 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	<b>4.765 GPa</b>	<b>691.1 ksi</b>	
	@Strain 1.20 %, Temperature 23.0 °C	@Strain 1.20 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	<b>4.85 GPa</b>	<b>703 ksi</b>	
	@Strain 0.800 %, Temperature 23.0 °C	@Strain 0.800 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	<b>4.87 GPa</b>	<b>706 ksi</b>	

Mechanical Properties	Metric @Strain 1.60 %, Temperature -40.0 °C	English @Strain 1.60 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2 Comments
	4.97 GPa	720 ksi	
	@Strain 1.20 %, Temperature -40.0 °C	@Strain 1.20 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	5.02 GPa	728 ksi	
	@Strain 0.100 %, Temperature -40.0 °C	@Strain 0.100 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	5.0825 GPa	737.17 ksi	
	@Strain 0.800 %, Temperature -40.0 °C	@Strain 0.800 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
Charpy Impact Unnotched	6.00 J/cm <sup>2</sup>	28.6 ft-lb/in <sup>2</sup>	50%RH; ISO 179/1eU
	7.00 J/cm <sup>2</sup>	33.3 ft-lb/in <sup>2</sup>	DAM; ISO 179/1eU
Charpy Impact, Notched	0.600 J/cm <sup>2</sup>	2.86 ft-lb/in <sup>2</sup>	DAM; ISO 179/1eA
Tensile Creep Modulus, 1 hour	5500 MPa	798000 psi	50%RH; ISO 899-1
	@Time 3600 sec	@Time 1.00 hour	
Tensile Creep Modulus, 1000 hours	5000 MPa	725000 psi	50%RH; ISO 899-1
	@Time 3.60e+6 sec	@Time 1000 hour	

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
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	50%RH; IEC 60093
Dielectric Strength	16.5 kV/mm	419 kV/in	DAM; IEC 60243-1
Dissipation Factor	0.015	0.015	DAM; IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	0.015	0.015	DAM; IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	

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