

DuPont Performance Polymers Zytel® HTN 51G45HSL NC010 Polyphthalamide (PPA) (Unverified Data**)

Category : Polymer , Thermoplastic , Polyphthalamide (PPA) , Polyphthalamide (PPA), 50% Glass Fiber Reinforced

Material Notes:

45% Glass Reinforced PPA High Performance Polyamide Zytel HTN51G45HSL NC010 is a 45% 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-51G45HSL-NC010-Polyphthalamide-PPA-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Density	1.57 g/cc	0.0567 lb/in ³	DAM; ISO 1183
Water Absorption	3.6 %	3.6 %	DAM; Sim. to ISO 62
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Moisture Absorption	1.20 %	1.20 %	DAM; Sim. to ISO 62
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Linear Mold Shrinkage, Flow	0.0020 cm/cm	0.0020 in/in	DAM; ISO 294-4 2577
Linear Mold Shrinkage, Transverse	0.0060 cm/cm	0.0060 in/in	DAM; ISO 294-4 2577

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	108	108	DAM; ISO 2039-2
Hardness, Rockwell R	124	124	DAM; ISO 2039-2
Tensile Strength at Break	230 MPa	33400 psi	50%RH; ISO 527-1/-2
	240 MPa	34800 psi	DAM; ISO 527-1/-2
Tensile Stress	18.5 MPa	2680 psi	50%RH; ISO 11403-1 -2
	@Strain 0.100 %, Temperature -40.0 °C	@Strain 0.100 %, Temperature -40.0 °F	
	20.34 MPa	2950 psi	DAM; ISO 11403-1 -2
	@Strain 0.100 %, Temperature 23.0 °C	@Strain 0.100 %, Temperature 73.4 °F	
	26.43 MPa	3833 psi	50%RH; ISO 11403-1 -2
	@Strain 0.500 %, Temperature 150 °C	@Strain 0.500 %, Temperature 302 °F	
	28.93 MPa	4196 psi	DAM; ISO 11403-1 -2

Mechanical Properties	Metric @Strain 0.400 %, Temperature 150 °C	English @Strain 0.400 %, Temperature 302 °F	Comments
	35.62 MPa	5166 psi	50%RH; ISO 11403-1 -2
	@Strain 0.800 %, Temperature 150 °C	@Strain 0.800 %, Temperature 302 °F	
	37.1 MPa	5380 psi	DAM; ISO 11403-1 -2
	@Strain 0.280 %, Temperature 90.0 °C	@Strain 0.280 %, Temperature 194 °F	
	40.2 MPa	5830 psi	DAM; ISO 11403-1 -2
	@Strain 0.260 %, Temperature 40.0 °C	@Strain 0.260 %, Temperature 104 °F	
	47.26 MPa	6854 psi	50%RH; ISO 11403-1 -2
	@Strain 1.40 %, Temperature 150 °C	@Strain 1.40 %, Temperature 302 °F	
	47.29 MPa	6859 psi	DAM; ISO 11403-1 -2
	@Strain 0.900 %, Temperature 150 °C	@Strain 0.900 %, Temperature 302 °F	
	54.83 MPa	7952 psi	50%RH; ISO 11403-1 -2
	@Strain 2.10 %, Temperature 150 °C	@Strain 2.10 %, Temperature 302 °F	
	55.94 MPa	8113 psi	DAM; ISO 11403-1 -2
	@Strain 1.40 %, Temperature 150 °C	@Strain 1.40 %, Temperature 302 °F	
	58.28 MPa	8453 psi	50%RH; ISO 11403-1 -2
	@Strain 0.400 %, Temperature 23.0 °C	@Strain 0.400 %, Temperature 73.4 °F	
	63.08 MPa	9149 psi	DAM; ISO 11403-1 -2
	@Strain 2.10 %, Temperature 150 °C	@Strain 2.10 %, Temperature 302 °F	
	83.11 MPa	12050 psi	DAM; ISO 11403-1 -2
	@Strain 0.600 %, Temperature -40.0 °C	@Strain 0.600 %, Temperature -40.0 °F	
	111.55 MPa	16179 psi	50%RH; ISO 11403-1 -2
	@Strain 0.800 %, Temperature 23.0 °C	@Strain 0.800 %, Temperature 73.4 °F	
	117.8 MPa	17090 psi	DAM; ISO 11403-1 -2
	@Strain 0.800 %, Temperature 23.0 °C	@Strain 0.800 %, Temperature 73.4 °F	

Mechanical Properties	119.37 MPa Metric	17313 psi English	Comments 50%RH; ISO 11403-1 -2
	@Strain 0.800 %, Temperature -40.0 °C	@Strain 0.800 %, Temperature -40.0 °F	
	122 MPa	17700 psi	DAM; ISO 11403-1 -2
	@Strain 1.10 %, Temperature 90.0 °C	@Strain 1.10 %, Temperature 194 °F	
	136 MPa	19700 psi	DAM; ISO 11403-1 -2
	@Strain 1.01 %, Temperature 40.0 °C	@Strain 1.01 %, Temperature 104 °F	
	145.04 MPa	21036 psi	50%RH; ISO 11403-1 -2
	@Strain 1.10 %, Temperature 23.0 °C	@Strain 1.10 %, Temperature 73.4 °F	
	150.6 MPa	21840 psi	DAM; ISO 11403-1 -2
	@Strain 1.10 %, Temperature -40.0 °C	@Strain 1.10 %, Temperature -40.0 °F	
	153.01 MPa	22192 psi	DAM; ISO 11403-1 -2
	@Strain 1.10 %, Temperature 23.0 °C	@Strain 1.10 %, Temperature 73.4 °F	
	161 MPa	23400 psi	DAM; ISO 11403-1 -2
	@Strain 1.90 %, Temperature 90.0 °C	@Strain 1.90 %, Temperature 194 °F	
	169.58 MPa	24596 psi	50%RH; ISO 11403-1 -2
	@Strain 1.20 %, Temperature -40.0 °C	@Strain 1.20 %, Temperature -40.0 °F	
	174.29 MPa	25279 psi	50%RH; ISO 11403-1 -2
	@Strain 1.40 %, Temperature 23.0 °C	@Strain 1.40 %, Temperature 73.4 °F	
	177 MPa	25700 psi	DAM; ISO 11403-1 -2
	@Strain 2.70 %, Temperature 90.0 °C	@Strain 2.70 %, Temperature 194 °F	
	183.74 MPa	26649 psi	DAM; ISO 11403-1 -2
	@Strain 1.40 %, Temperature 23.0 °C	@Strain 1.40 %, Temperature 73.4 °F	
	187.43 MPa	27184 psi	DAM; ISO 11403-1 -2
	@Strain 1.40 %, Temperature -40.0 °C	@Strain 1.40 %, Temperature -40.0 °F	
	201 MPa	29200 psi	DAM; ISO 11403-1 -2
	@Strain 1.75 %, Temperature 40.0 °C	@Strain 1.75 %, Temperature 104 °F	

Mechanical Properties	Metric	English	Comments
	203.42 MPa	29504 psi	
	@Strain 1.50 %, Temperature -40.0 °C	@Strain 1.50 %, Temperature -40.0 °F	50%RH; ISO 11403-1 -2
	230.47 MPa	33427 psi	
	@Strain 1.80 %, Temperature -40.0 °C	@Strain 1.80 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	236.01 MPa	34230 psi	
	@Strain 2.40 %, Temperature 23.0 °C	@Strain 2.40 %, Temperature 73.4 °F	50%RH; ISO 11403-1 -2
	238 MPa	34500 psi	
	@Strain 2.52 %, Temperature 40.0 °C	@Strain 2.52 %, Temperature 104 °F	DAM; ISO 11403-1 -2
	246.78 MPa	35792 psi	
	@Strain 2.30 %, Temperature 23.0 °C	@Strain 2.30 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	301.78 MPa	43770 psi	
	@Strain 2.70 %, Temperature -40.0 °C	@Strain 2.70 %, Temperature -40.0 °F	50%RH; ISO 11403-1 -2
Elongation at Break	2.1 %	2.1 %	50%RH; ISO 527-1/-2
	2.4 %	2.4 %	DAM; ISO 527-1/-2
Tensile Modulus	15.0 GPa	2180 ksi	DAM; ISO 527-1/-2
	15.0 GPa	2180 ksi	50%RH; ISO 527-1/-2
Flexural Modulus	13.2 GPa	1910 ksi	DAM; ISO 178
	13.2 GPa	1910 ksi	50%RH; ISO 178
Secant Modulus	3.22 GPa	467 ksi	
	@Strain 2.80 %, Temperature 100 °C	@Strain 2.80 %, Temperature 212 °F	50%RH; ISO 11403-1 -2
	3.78 GPa	548 ksi	
	@Strain 2.30 %, Temperature 100 °C	@Strain 2.30 %, Temperature 212 °F	50%RH; ISO 11403-1 -2
	4.88 GPa	708 ksi	
	@Strain 1.60 %, Temperature 100 °C	@Strain 1.60 %, Temperature 212 °F	50%RH; ISO 11403-1 -2
	6.60 GPa	958 ksi	
	@Strain 0.900 %,	@Strain 0.900 %,	50%RH; ISO 11403-1 -2

Mechanical Properties	Temperature 100 °C Metric	Temperature 212 °F English	Comments
	6.70 GPa @Strain 2.20 %, Temperature 80.0 °C	972 ksi @Strain 2.20 %, Temperature 176 °F	50%RH; ISO 11403-1 -2
	6.8768 GPa @Strain 2.50 %, Temperature 100 °C	997.41 ksi @Strain 2.50 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	7.78 GPa @Strain 1.80 %, Temperature 80.0 °C	1130 ksi @Strain 1.80 %, Temperature 176 °F	50%RH; ISO 11403-1 -2
	8.22 GPa @Strain 1.90 %, Temperature 100 °C	1190 ksi @Strain 1.90 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	9.09 GPa @Strain 1.40 %, Temperature 80.0 °C	1320 ksi @Strain 1.40 %, Temperature 176 °F	50%RH; ISO 11403-1 -2
	9.40 GPa @Strain 0.100 %, Temperature 100 °C	1360 ksi @Strain 0.100 %, Temperature 212 °F	50%RH; ISO 11403-1 -2
	10.0 GPa @Strain 1.30 %, Temperature 100 °C	1460 ksi @Strain 1.30 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	10.7 GPa @Strain 2.10 %, Temperature 23.0 °C	1550 ksi @Strain 2.10 %, Temperature 73.4 °F	50%RH; ISO 11403-1 -2
	10.7 GPa @Strain 2.02 %, Temperature 40.0 °C	1560 ksi @Strain 2.02 %, Temperature 104 °F	DAM; ISO 11403-1 -2
	11.5 GPa @Strain 0.800 %, Temperature 80.0 °C	1670 ksi @Strain 0.800 %, Temperature 176 °F	50%RH; ISO 11403-1 -2
	11.5 GPa @Strain 0.900 %, Temperature 100 °C	1670 ksi @Strain 0.900 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	11.5 GPa @Strain 2.00 %, Temperature 23.0 °C	1670 ksi @Strain 2.00 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	11.8 GPa	1710 ksi	

Mechanical Properties	Metric	English	Comments
	@ Strain 2.40 %, Temperature -40.0 °C	@ Strain 2.40 %, Temperature -40.0 °F	ASTM: ISO 11403-1 -2

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