

DuPont Performance Polymers Zytel® HTN 51G35HSL NC010 Polyphthalamide (PPA) (Unverified Data**)

Category : Polymer , Thermoplastic , Polyphthalamide (PPA) , Polyphthalamide (PPA), 40% Glass Fiber Reinforced

Material Notes:

35% Glass Reinforced PPA High Performance Polyamide Zytel HTN51G35HSL NC010 is a 35% 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-51G35HSL-NC010-Polyphthalamide-PPA-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Density	1.47 g/cc	0.0531 lb/in ³	DAM; ISO 1183
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
Tensile Strength at Break	210 MPa	30500 psi	50%RH; ISO 527-1/-2
	220 MPa	31900 psi	DAM; ISO 527-1/-2
Tensile Stress	23.98 MPa	3478 psi	50%RH; ISO 11403-1 -2
	@Strain 0.560 %, Temperature 150 °C	@Strain 0.560 %, Temperature 302 °F	
	25.28 MPa	3667 psi	DAM; ISO 11403-1 -2
	@Strain 0.240 %, Temperature 23.0 °C	@Strain 0.240 %, Temperature 73.4 °F	
	26.47 MPa	3839 psi	50%RH; ISO 11403-1 -2
	@Strain 0.230 %, Temperature 23.0 °C	@Strain 0.230 %, Temperature 73.4 °F	
	26.51 MPa	3845 psi	50%RH; ISO 11403-1 -2
	@Strain 0.230 %, Temperature 0.000 °C	@Strain 0.230 %, Temperature 32.0 °F	
	26.73 MPa	3877 psi	DAM; ISO 11403-1 -2
	@Strain 0.240 %, Temperature 40.0 °C	@Strain 0.240 %, Temperature 104 °F	
	27.02 MPa	3919 psi	50%RH; ISO 11403-1 -2
	@Strain 0.230 %, Temperature -20.0 °C	@Strain 0.230 %, Temperature -4.00 °F	

Mechanical Properties	28.85 MPa Metric	4184 psi English	Comments DAM; ISO 11403-1 -2
	@Strain 0.250 %, Temperature 0.000 °C	@Strain 0.250 %, Temperature 32.0 °F	
	29.4 MPa	4260 psi	DAM; ISO 11403-1 -2
	@Strain 0.240 %, Temperature -20.0 °C	@Strain 0.240 %, Temperature -4.00 °F	
	29.81 MPa	4324 psi	50%RH; ISO 11403-1 -2
	@Strain 0.260 %, Temperature 40.0 °C	@Strain 0.260 %, Temperature 104 °F	
	31.35 MPa	4547 psi	DAM; ISO 11403-1 -2
	@Strain 0.280 %, Temperature 90.0 °C	@Strain 0.280 %, Temperature 194 °F	
	33.7 MPa	4890 psi	50%RH; ISO 11403-1 -2
	@Strain 0.360 %, Temperature 90.0 °C	@Strain 0.360 %, Temperature 194 °F	
	34.48 MPa	5001 psi	DAM; ISO 11403-1 -2
	@Strain 0.730 %, Temperature 150 °C	@Strain 0.730 %, Temperature 302 °F	
	51.14 MPa	7417 psi	50%RH; ISO 11403-1 -2
	@Strain 2.21 %, Temperature 150 °C	@Strain 2.21 %, Temperature 302 °F	
	59.63 MPa	8649 psi	50%RH; ISO 11403-1 -2
	@Strain 3.87 %, Temperature 150 °C	@Strain 3.87 %, Temperature 302 °F	
	62.2 MPa	9020 psi	50%RH; ISO 11403-1 -2
	@Strain 5.52 %, Temperature 150 °C	@Strain 5.52 %, Temperature 302 °F	
	63.98 MPa	9280 psi	DAM; ISO 11403-1 -2
	@Strain 2.90 %, Temperature 150 °C	@Strain 2.90 %, Temperature 302 °F	
	69.22 MPa	10040 psi	DAM; ISO 11403-1 -2
	@Strain 7.21 %, Temperature 150 °C	@Strain 7.21 %, Temperature 302 °F	
	70.63 MPa	10240 psi	DAM; ISO 11403-1 -2
	@Strain 5.04 %, Temperature 150 °C	@Strain 5.04 %, Temperature 302 °F	
	95.73 MPa	13880 psi	50%RH; ISO 11403-1 -2
	@Strain 1.41 %,	@Strain 1.41 %,	

Mechanical Properties	Temperature 90.0 °C Metric	Temperature 194 °F English	Comments
	103.1 MPa @Strain 0.920 %, Temperature 40.0 °C	14950 psi @Strain 0.920 %, Temperature 104 °F	DAM; ISO 11403-1 -2
	103.49 MPa @Strain 0.890 %, Temperature 0.000 °C	15010 psi @Strain 0.890 %, Temperature 32.0 °F	50%RH; ISO 11403-1 -2
	105.15 MPa @Strain 0.930 %, Temperature 23.0 °C	15251 psi @Strain 0.930 %, Temperature 73.4 °F	50%RH; ISO 11403-1 -2
	105.24 MPa @Strain 0.880 %, Temperature -20.0 °C	15264 psi @Strain 0.880 %, Temperature -4.00 °F	50%RH; ISO 11403-1 -2
	105.24 MPa @Strain 0.930 %, Temperature 23.0 °C	15264 psi @Strain 0.930 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	110.26 MPa @Strain 1.01 %, Temperature 40.0 °C	15992 psi @Strain 1.01 %, Temperature 104 °F	50%RH; ISO 11403-1 -2
	111.11 MPa @Strain 1.12 %, Temperature 90.0 °C	16115 psi @Strain 1.12 %, Temperature 194 °F	DAM; ISO 11403-1 -2
	112.6 MPa @Strain 0.970 %, Temperature 0.000 °C	16330 psi @Strain 0.970 %, Temperature 32.0 °F	DAM; ISO 11403-1 -2
	112.85 MPa @Strain 2.46 %, Temperature 90.0 °C	16368 psi @Strain 2.46 %, Temperature 194 °F	50%RH; ISO 11403-1 -2
	114.7 MPa @Strain 3.51 %, Temperature 90.0 °C	16640 psi @Strain 3.51 %, Temperature 194 °F	50%RH; ISO 11403-1 -2
	115.46 MPa @Strain 0.970 %, Temperature -20.0 °C	16746 psi @Strain 0.970 %, Temperature -4.00 °F	DAM; ISO 11403-1 -2
	153.83 MPa @Strain 1.97 %, Temperature 90.0 °C	22311 psi @Strain 1.97 %, Temperature 194 °F	DAM; ISO 11403-1 -2

Mechanical Properties	163.9 MPa Metric	23770 psi English	Comments 50%RH; ISO 11403-1 -2
	@Strain 1.61 %, Temperature 40.0 °C	@Strain 1.61 %, Temperature 104 °F	
	165.58 MPa	24015 psi	50%RH; ISO 11403-1 -2
	@Strain 1.61 %, Temperature 23.0 °C	@Strain 1.61 %, Temperature 73.4 °F	
	166.29 MPa	24118 psi	50%RH; ISO 11403-1 -2
	@Strain 1.54 %, Temperature 0.000 °C	@Strain 1.54 %, Temperature 32.0 °F	
	166.4 MPa	24130 psi	50%RH; ISO 11403-1 -2
	@Strain 1.76 %, Temperature 40.0 °C	@Strain 1.76 %, Temperature 104 °F	
	167.14 MPa	24242 psi	DAM; ISO 11403-1 -2
	@Strain 1.62 %, Temperature 23.0 °C	@Strain 1.62 %, Temperature 73.4 °F	
	169.5 MPa	24580 psi	DAM; ISO 11403-1 -2
	@Strain 2.80 %, Temperature 90.0 °C	@Strain 2.80 %, Temperature 194 °F	
	172.39 MPa	25003 psi	50%RH; ISO 11403-1 -2
	@Strain 1.54 %, Temperature -20.0 °C	@Strain 1.54 %, Temperature -4.00 °F	
	180.66 MPa	26203 psi	DAM; ISO 11403-1 -2
	@Strain 1.69 %, Temperature 0.000 °C	@Strain 1.69 %, Temperature 32.0 °F	
	186.98 MPa	27119 psi	DAM; ISO 11403-1 -2
	@Strain 1.69 %, Temperature -20.0 °C	@Strain 1.69 %, Temperature -4.00 °F	
	196.3 MPa	28470 psi	50%RH; ISO 11403-1 -2
	@Strain 2.50 %, Temperature 40.0 °C	@Strain 2.50 %, Temperature 104 °F	
	204.62 MPa	29678 psi	DAM; ISO 11403-1 -2
	@Strain 2.31 %, Temperature 40.0 °C	@Strain 2.31 %, Temperature 104 °F	
	208.09 MPa	30181 psi	50%RH; ISO 11403-1 -2
	@Strain 2.31 %, Temperature 23.0 °C	@Strain 2.31 %, Temperature 73.4 °F	
	213.2 MPa	30920 psi	50%RH; ISO 11403-1 -2
	@Strain 2.20 %,	@Strain 2.20 %,	

Mechanical Properties	Temperature 0.000 °C Metric	Temperature 32.0 °F English	Comments
	214.3 MPa	31080 psi	
	@Strain 2.30 %, Temperature 23.0 °C	@Strain 2.30 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	224.8 MPa	32600 psi	
	@Strain 2.20 %, Temperature -20.0 °C	@Strain 2.20 %, Temperature -4.00 °F	50%RH; ISO 11403-1 -2
	226.6 MPa	32870 psi	
	@Strain 2.40 %, Temperature 0.000 °C	@Strain 2.40 %, Temperature 32.0 °F	DAM; ISO 11403-1 -2
	239.35 MPa	34715 psi	
	@Strain 2.40 %, Temperature -20.0 °C	@Strain 2.40 %, Temperature -4.00 °F	DAM; ISO 11403-1 -2
Elongation at Break	2.2 %	2.2 %	50%RH; ISO 527-1/-2
	2.4 %	2.4 %	DAM; ISO 527-1/-2
Tensile Modulus	12.0 GPa	1740 ksi	DAM; ISO 527-1/-2
	12.0 GPa	1740 ksi	50%RH; ISO 527-1/-2
Flexural Modulus	10.5 GPa	1520 ksi	DAM; ISO 178
	10.5 GPa	1520 ksi	50%RH; ISO 178
Shear Modulus	0.993 GPa	144 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature 150 °C	@Temperature 302 °F	
	2.3613 GPa	342.48 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature 110 °C	@Temperature 230 °F	
	2.48 GPa	360 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature 60.0 °C	@Temperature 140 °F	
	2.6424 GPa	383.25 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature 10.0 °C	@Temperature 50.0 °F	
	2.7253 GPa	395.28 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature -20.0 °C	@Temperature -4.00 °F	
	2.91 GPa	422 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature -50.0 °C	@Temperature -58.0 °F	

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