

DuPont Performance Polymers Zytel® HTN 52G35HSL BK083 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 HTN52G35HSL BK083 is a 35% glass reinforced heat stabilized lubricated high performance polyamide resin that can be molded in water heated molds. 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-52G35HSL-BK083-Polyphthalamide-PPA-Unverified-Data.php

Physical Properties	Metric	English	Comments
Density	1.46 g/cc	0.0527 lb/in ³	DAM; ISO 1183
Linear Mold Shrinkage, Flow	0.0030 cm/cm	0.0030 in/in	DAM; ISO 294-4 2577
Linear Mold Shrinkage, Transverse	0.0090 cm/cm	0.0090 in/in	DAM; ISO 294-4 2577

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	187 MPa	27100 psi	DAM; ISO 527-1/-2
Tensile Stress	5.24 MPa	760 psi	50%RH; ISO 11403-1 -2
	@Strain 0.100 %, Temperature 150 °C	@Strain 0.100 %, Temperature 302 °F	
	5.64 MPa	818 psi	DAM; ISO 11403-1 -2
	@Strain 0.100 %, Temperature 150 °C	@Strain 0.100 %, Temperature 302 °F	
	11.12 MPa	1613 psi	50%RH; ISO 11403-1 -2
	@Strain 0.100 %, Temperature 40.0 °C	@Strain 0.100 %, Temperature 104 °F	
	12.54 MPa	1819 psi	50%RH; ISO 11403-1 -2
	@Strain 0.100 %, Temperature 23.0 °C	@Strain 0.100 %, Temperature 73.4 °F	
	12.82 MPa	1859 psi	DAM; ISO 11403-1 -2
	@Strain 0.100 %, Temperature 23.0 °C	@Strain 0.100 %, Temperature 73.4 °F	
	13.75 MPa	1994 psi	50%RH; ISO 11403-1 -2
	@Strain 0.100 %, Temperature -40.0 °C	@Strain 0.100 %, Temperature -40.0 °F	
	18.76 MPa	2721 psi	

Mechanical Properties	Metric	English	Comments
	@Strain 0.400 %, Temperature 150 °C	@Strain 0.400 %, Temperature 302 °F	50%RH; ISO 11403-1 -2
	19.38 MPa	2811 psi	
	@Strain 0.100 %, Temperature -40.0 °C	@Strain 0.100 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	20.29 MPa	2943 psi	
	@Strain 0.400 %, Temperature 150 °C	@Strain 0.400 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	29.14 MPa	4226 psi	
	@Strain 0.700 %, Temperature 150 °C	@Strain 0.700 %, Temperature 302 °F	50%RH; ISO 11403-1 -2
	31.37 MPa	4550 psi	
	@Strain 0.700 %, Temperature 150 °C	@Strain 0.700 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	37.52 MPa	5442 psi	
	@Strain 1.00 %, Temperature 150 °C	@Strain 1.00 %, Temperature 302 °F	50%RH; ISO 11403-1 -2
	40.2 MPa	5830 psi	
	@Strain 1.00 %, Temperature 150 °C	@Strain 1.00 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	42.14 MPa	6112 psi	
	@Strain 0.400 %, Temperature 40.0 °C	@Strain 0.400 %, Temperature 104 °F	50%RH; ISO 11403-1 -2
	47.24 MPa	6852 psi	
	@Strain 0.400 %, Temperature 23.0 °C	@Strain 0.400 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	47.48 MPa	6886 psi	
	@Strain 0.400 %, Temperature 23.0 °C	@Strain 0.400 %, Temperature 73.4 °F	50%RH; ISO 11403-1 -2
	51.32 MPa	7443 psi	
	@Strain 0.400 %, Temperature -40.0 °C	@Strain 0.400 %, Temperature -40.0 °F	50%RH; ISO 11403-1 -2
	54.47 MPa	7900 psi	
	@Strain 1.90 %, Temperature 150 °C	@Strain 1.90 %, Temperature 302 °F	50%RH; ISO 11403-1 -2
	56.52 MPa	8198 psi	
	@Strain 0.400 %, Temperature -40.0 °C	@Strain 0.400 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2

Mechanical Properties	MetricMPa	Englishpsi	Comments
	@Strain 1.90 %, Temperature 150 °C	@Strain 1.90 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	60.25 MPa	8739 psi	
	@Strain 2.40 %, Temperature 150 °C	@Strain 2.40 %, Temperature 302 °F	50%RH; ISO 11403-1 -2
	64.64 MPa	9375 psi	
	@Strain 3.00 %, Temperature 150 °C	@Strain 3.00 %, Temperature 302 °F	50%RH; ISO 11403-1 -2
	65.51 MPa	9501 psi	
	@Strain 2.40 %, Temperature 150 °C	@Strain 2.40 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	66.47 MPa	9641 psi	
	@Strain 3.40 %, Temperature 150 °C	@Strain 3.40 %, Temperature 302 °F	50%RH; ISO 11403-1 -2
	67.82 MPa	9836 psi	
	@Strain 3.90 %, Temperature 150 °C	@Strain 3.90 %, Temperature 302 °F	50%RH; ISO 11403-1 -2
	68.5 MPa	9940 psi	
	@Strain 0.700 %, Temperature 40.0 °C	@Strain 0.700 %, Temperature 104 °F	50%RH; ISO 11403-1 -2
	71.23 MPa	10330 psi	
	@Strain 3.00 %, Temperature 150 °C	@Strain 3.00 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	73.88 MPa	10720 psi	
	@Strain 3.40 %, Temperature 150 °C	@Strain 3.40 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	76.21 MPa	11050 psi	
	@Strain 3.90 %, Temperature 150 °C	@Strain 3.90 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	78.17 MPa	11340 psi	
	@Strain 4.70 %, Temperature 150 °C	@Strain 4.70 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	78.28 MPa	11350 psi	
	@Strain 4.80 %, Temperature 150 °C	@Strain 4.80 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	78.52 MPa	11390 psi	
			50%RH; ISO 11403-1 -2

Mechanical Properties	Metric @Strain 0.700 %, Temperature 23.0 °C	English @Strain 0.700 %, Temperature 73.4 °F	Comments
	79.32 MPa	11500 psi	
	@Strain 0.700 %, Temperature 23.0 °C	@Strain 0.700 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	87.51 MPa	12690 psi	
	@Strain 0.700 %, Temperature -40.0 °C	@Strain 0.700 %, Temperature -40.0 °F	50%RH; ISO 11403-1 -2
	90.68 MPa	13150 psi	
	@Strain 1.00 %, Temperature 40.0 °C	@Strain 1.00 %, Temperature 104 °F	50%RH; ISO 11403-1 -2
	91.19 MPa	13230 psi	
	@Strain 0.700 %, Temperature -40.0 °C	@Strain 0.700 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	106.11 MPa	15390 psi	
	@Strain 1.00 %, Temperature 23.0 °C	@Strain 1.00 %, Temperature 73.4 °F	50%RH; ISO 11403-1 -2
	108.14 MPa	15684 psi	
	@Strain 1.00 %, Temperature 23.0 °C	@Strain 1.00 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	120.06 MPa	17413 psi	
	@Strain 1.00 %, Temperature -40.0 °C	@Strain 1.00 %, Temperature -40.0 °F	50%RH; ISO 11403-1 -2
	122.36 MPa	17747 psi	
	@Strain 1.00 %, Temperature -40.0 °C	@Strain 1.00 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	135.03 MPa	19584 psi	
	@Strain 1.90 %, Temperature 40.0 °C	@Strain 1.90 %, Temperature 104 °F	50%RH; ISO 11403-1 -2
	146.82 MPa	21294 psi	
	@Strain 2.40 %, Temperature 40.0 °C	@Strain 2.40 %, Temperature 104 °F	50%RH; ISO 11403-1 -2
	163.46 MPa	23708 psi	
	@Strain 1.90 %, Temperature 23.0 °C	@Strain 1.90 %, Temperature 73.4 °F	50%RH; ISO 11403-1 -2
	173.69 MPa	25192 psi	
	@Strain 1.90 %, Temperature 23.0 °C	@Strain 1.90 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2

Mechanical Properties	197.26 MPa Metric	28610 psi English	Comments DAM; ISO 11403-1 -2
	@Strain 1.90 %, Temperature -40.0 °C	@Strain 1.90 %, Temperature -40.0 °F	
	199.19 MPa	28890 psi	
	@Strain 1.90 %, Temperature -40.0 °C	@Strain 1.90 %, Temperature -40.0 °F	50%RH; ISO 11403-1 -2
Elongation at Break	2.1 %	2.1 %	DAM; ISO 527-1/-2
Tensile Modulus	11.6 GPa	1680 ksi	DAM; ISO 527-1/-2
Flexural Modulus	10.3 GPa	1490 ksi	DAM; ISO 178
Secant Modulus	3.4555 GPa	501.19 ksi	
	@Strain 2.00 %, Temperature 100 °C	@Strain 2.00 %, Temperature 212 °F	50%RH; ISO 11403-1 -2
	3.84 GPa	558 ksi	
	@Strain 1.60 %, Temperature 100 °C	@Strain 1.60 %, Temperature 212 °F	50%RH; ISO 11403-1 -2
	4.3075 GPa	624.76 ksi	
	@Strain 1.20 %, Temperature 100 °C	@Strain 1.20 %, Temperature 212 °F	50%RH; ISO 11403-1 -2
	4.4645 GPa	647.53 ksi	
	@Strain 2.00 %, Temperature 100 °C	@Strain 2.00 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	4.90 GPa	711 ksi	
	@Strain 0.800 %, Temperature 100 °C	@Strain 0.800 %, Temperature 212 °F	50%RH; ISO 11403-1 -2
	4.96 GPa	719 ksi	
	@Strain 1.60 %, Temperature 100 °C	@Strain 1.60 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	5.565 GPa	807.1 ksi	
	@Strain 1.20 %, Temperature 100 °C	@Strain 1.20 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	5.715 GPa	828.9 ksi	
	@Strain 0.400 %, Temperature 100 °C	@Strain 0.400 %, Temperature 212 °F	50%RH; ISO 11403-1 -2
	6.246 GPa	905.9 ksi	
	@Strain 2.00 %, Temperature 80.0 °C	@Strain 2.00 %, Temperature 176 °F	DAM; ISO 11403-1 -2
	6.32 GPa	917 ksi	

Mechanical Properties	Metric	English	Comments
	@Strain 0.800 %, Temperature 100 °C	@Strain 0.800 %, Temperature 212 °F	
	6.33 GPa	918 ksi	
	@Strain 0.100 %, Temperature 100 °C	@Strain 0.100 %, Temperature 212 °F	50%RH; ISO 11403-1 -2

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