

DuPont Performance Polymers Zytel® 70G30HSL BK039B Nylon 66 (Unverified Data**)

Category : Polymer , Thermoplastic , Nylon , Nylon 66 , Nylon 66, 30% Glass Fiber Filled

Material Notes:

30% Glass Reinforced Heat Stabilized Polyamide 66 Information provided by DuPont Performance Polymers

Order this product through the following link:

http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Zytel-70G30HSL-BK039B-Nylon-66-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Density	1.20 g/cc	0.0434 lb/in³	
	1.37 g/cc	0.0495 lb/in³	DAM; ISO 1183
Water Absorption	6.0 %	6.0 %	
	@Thickness 2.00 mm	@Thickness 0.0787 in	DAM; Sim. to ISO 62
Moisture Absorption	1.90 %	1.90 %	
	@Thickness 2.00 mm	@Thickness 0.0787 in	DAM; Sim. to ISO 62
Viscosity	39000 cP	39000 cP	
	@Shear Rate 5000 1/s, Temperature 315 °C	@Shear Rate 5000 1/s, Temperature 599 °F	ISO 11403-1 -2
	64000 cP	64000 cP	
	@Shear Rate 5000 1/s, Temperature 295 °C	@Shear Rate 5000 1/s, Temperature 563 °F	ISO 11403-1 -2
	99000 cP	99000 cP	
	@Shear Rate 500 1/s, Temperature 315 °C	@Shear Rate 500 1/s, Temperature 599 °F	ISO 11403-1 -2
	109000 cP	109000 cP	
	@Shear Rate 5000 1/s, Temperature 275 °C	@Shear Rate 5000 1/s, Temperature 527 °F	ISO 11403-1 -2
	167000 cP	167000 cP	
	@Shear Rate 500 1/s, Temperature 295 °C	@Shear Rate 500 1/s, Temperature 563 °F	ISO 11403-1 -2
	290000 cP	290000 cP	
	@Shear Rate 500 1/s, Temperature 275 °C	@Shear Rate 500 1/s, Temperature 527 °F	ISO 11403-1 -2
Viscosity Test	150 cm³/g	150 cm³/g	DAM; ISO 307 1157 1628
Linear Mold Shrinkage, Flow	0.0030 cm/cm	0.0030 in/in	DAM; ISO 294-4 2577

Linear Mold Shrinkage, Transverse Physical Properties	0.011 cm/cm Metric	0.011 in/in English	DAM; ISO 294-4 2577 Comments
Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	120 MPa	17400 psi	50%RH; ISO 527-1/-2
	190 MPa	27600 psi	DAM; ISO 527-1/-2
Elongation at Break	3.0 %	3.0 %	DAM; ISO 527-1/-2
	4.5 %	4.5 %	50%RH; ISO 527-1/-2
Tensile Modulus	7.00 GPa	1020 ksi	50%RH; ISO 527-1/-2
	10.0 GPa	1450 ksi	DAM; ISO 527-1/-2
Flexural Modulus	7.00 GPa	1020 ksi	50%RH; ISO 178
	9.50 GPa	1380 ksi	DAM; ISO 178
Shear Modulus	0.5619 GPa	81.50 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature 150 °C	@Temperature 302 °F	
	0.6479 GPa	93.97 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature 110 °C	@Temperature 230 °F	
	1.1717 GPa	169.94 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature 60.0 °C	@Temperature 140 °F	
	1.91 GPa	277 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature 10.0 °C	@Temperature 50.0 °F	
Shear Strength	1.9809 GPa	287.31 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature -20.0 °C	@Temperature -4.00 °F	
	2.0893 GPa	303.03 ksi	DAM; Dynamic; ISO 11403-1 -2
	@Temperature -50.0 °C	@Temperature -58.0 °F	
	0.0495 MPa	7.18 psi	ISO 11403-1 -2
	@Shear Rate 500 1/s, Temperature 315 °C	@Shear Rate 500 1/s, Temperature 599 °F	
	0.0835 MPa	12.1 psi	ISO 11403-1 -2
	@Shear Rate 500 1/s, Temperature 295 °C	@Shear Rate 500 1/s, Temperature 563 °F	
	0.145 MPa	21.0 psi	ISO 11403-1 -2
	@Shear Rate 500 1/s, Temperature 275 °C	@Shear Rate 500 1/s, Temperature 527 °F	

Impact, Notched (ISO) Mechanical Properties	10.0 kJ/m ² Metric	4.76 ft-lb/in ² English	DAM; ISO 180/1A Comments
	12.0 kJ/m ²	5.71 ft-lb/in ²	50%RH; ISO 180/1A
	7.00 kJ/m ² @Temperature -40.0 °C	3.33 ft-lb/in ² @Temperature -40.0 °F	DAM; ISO 180/1A
Charpy Impact Unnotched	7.50 J/cm ²	35.7 ft-lb/in ²	DAM; ISO 179/1eU
	8.00 J/cm ²	38.1 ft-lb/in ²	50%RH; ISO 179/1eU
	7.00 J/cm ² @Temperature -30.0 °C	33.3 ft-lb/in ² @Temperature -22.0 °F	DAM; ISO 179/1eU
	7.00 J/cm ² @Temperature -30.0 °C	33.3 ft-lb/in ² @Temperature -22.0 °F	50%RH; ISO 179/1eU
Charpy Impact, Notched	1.00 J/cm ²	4.76 ft-lb/in ²	DAM; ISO 179/1eA
	1.20 J/cm ²	5.71 ft-lb/in ²	50%RH; ISO 179/1eA
	0.900 J/cm ² @Temperature -30.0 °C	4.28 ft-lb/in ² @Temperature -22.0 °F	DAM; ISO 179/1eA
	0.900 J/cm ² @Temperature -30.0 °C	4.28 ft-lb/in ² @Temperature -22.0 °F	50%RH; ISO 179/1eA
Puncture Energy	4.50 J @Load 98.9 kg	3.32 ft-lb @Load 218 lb	DAM; ISO 6603-2
Tensile Creep Modulus, 1 hour	2200 MPa @Pressure 35.0 MPa, Temperature 140 °C	319000 psi @Pressure 5080 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2
	2271.4 MPa @Pressure 30.0 MPa, Temperature 140 °C	329440 psi @Pressure 4350 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2
	2360 MPa @Pressure 25.0 MPa, Temperature 140 °C	343000 psi @Pressure 3630 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2
	2480 MPa @Pressure 20.0 MPa, Temperature 140 °C	360000 psi @Pressure 2900 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2
	2630 MPa @Pressure 15.0 MPa, Temperature 140 °C	382000 psi @Pressure 2180 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2

Mechanical Properties	2800 MPa Metric	406000 psi English	Comments
	@Pressure 10.0 MPa, Temperature 140 °C	@Pressure 1450 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2
	2980 MPa	432000 psi	
	@Pressure 5.00 MPa, Temperature 140 °C	@Pressure 725 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2
	6800 MPa	986000 psi	
	@Time 3600 sec	@Time 1.00 hour	50%RH; ISO 899-1
Tensile Creep Modulus, 1000 hours	1820 MPa	264000 psi	
	@Pressure 35.0 MPa, Temperature 140 °C	@Pressure 5080 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2
	1900 MPa	276000 psi	
	@Pressure 30.0 MPa, Temperature 140 °C	@Pressure 4350 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2
	2012.5 MPa	291890 psi	
	@Pressure 25.0 MPa, Temperature 140 °C	@Pressure 3630 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2
	2157.6 MPa	312930 psi	
	@Pressure 20.0 MPa, Temperature 140 °C	@Pressure 2900 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2
	2340 MPa	340000 psi	
	@Pressure 15.0 MPa, Temperature 140 °C	@Pressure 2180 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2
	2570 MPa	372000 psi	
	@Pressure 10.0 MPa, Temperature 140 °C	@Pressure 1450 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2
	2810 MPa	407000 psi	
	@Pressure 5.00 MPa, Temperature 140 °C	@Pressure 725 psi, Temperature 284 °F	50%RH; ISO 11403-1 -2
	5100 MPa	740000 psi	
	@Time 3.60e+6 sec	@Time 1000 hour	50%RH; ISO 899-1

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+11 ohm-cm	1.00e+11 ohm-cm	50%RH; IEC 60093
	>= 1.00e+15 ohm-cm	>= 1.00e+15 ohm-cm	DAM; IEC 60093
Surface Resistance	1.00e+13 ohm	1.00e+13 ohm	50%RH; IEC 60093

Electrical Properties	^{4.1} Metric	^{4.1} English	Comments
Dielectric Constant			DAM; IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	4.4	4.4	DAM; IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
	4.6	4.6	50%RH; IEC 60250
	@Frequency 1.00e+6 Hz	@Frequency 1.00e+6 Hz	
	11	11	50%RH; IEC 60250
	@Frequency 100 Hz	@Frequency 100 Hz	
Dielectric Strength	32.0 kV/mm	813 kV/in	50%RH; IEC 60243-1
	38.0 kV/mm	965 kV/in	DAM; IEC 60243-1

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