DuPont Performance Polymers Zytel® E51HSB NC010 Nylon 66 (Unverified Data**)

Category : Polymer , Thermoplastic , Nylon , Nylon 66

Material Notes:

Unreinforced Heat Stabilized High Viscosity Polyamide 66 Zytel E51HSB NC010 is a high molecular weight heat stabilized polyamide 66 resin for injection molding and extrusion.Information provided by DuPont Performance Polymers

Order this product through the following link:
http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Zytel-E51HSB-NC010-Nylon-66-nbspUnverified-Data.php

Physical Properties	Metric	English	Comments
Density	0.980 g/cc	0.0354 lb/in³	
	1.14 g/cc	0.0412 lb/in³	DAM; ISO 1183
Water Absorption	8.5 % @Thickness 2.00 mm	8.5 % @Thickness 0.0787 in	DAM; Sim. to ISO 62
Moisture Absorption	2.60 % @Thickness 2.00 mm	2.60 % @Thickness 0.0787 in	DAM; Sim. to ISO 62
Viscosity	92024 cP @Shear Rate 5000 1/s, Temperature 300 °C	92024 cP @Shear Rate 5000 1/s, Temperature 572 °F	ISO 11403-1 -2
	104500 cP @Shear Rate 5000 1/s, Temperature 290 °C	104500 cP @Shear Rate 5000 1/s, Temperature 554 °F	ISO 11403-1 -2
	119500 cP @Shear Rate 5000 1/s, Temperature 280 °C	119500 cP @Shear Rate 5000 1/s, Temperature 536 °F	ISO 11403-1 -2
	358900 cP @Shear Rate 500 1/s, Temperature 300 °C	358900 cP @Shear Rate 500 1/s, Temperature 572 °F	ISO 11403-1 -2
	447000 cP @Shear Rate 500 1/s, Temperature 290 °C	447000 cP @Shear Rate 500 1/s, Temperature 554 °F	ISO 11403-1 -2
	551300 cP @Shear Rate 500 1/s, Temperature 280 °C	551300 cP @Shear Rate 500 1/s, Temperature 536 °F	ISO 11403-1 -2
Viscosity Test	330 cm³/g	330 cm³/g	DAM; ISO 307 1157 1628

Physical Properties	Metric	English	Comments
Linear Mold Shrinkage, Flow	0.013 cm/cm	0.013 in/in	DAM; ISO 294-4 2577
Linear Mold Shrinkage, Transverse	0.013 cm/cm	0.013 in/in	DAM; ISO 294-4 2577

Mechanical Properties	Metric	English	Comments
Tensile Stress	6.00 MPa @Strain 1.60 %, Temperature 150 °C	870 psi @Strain 1.60 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	8.60 MPa @Strain 2.40 %, Temperature 150 °C	1250 psi @Strain 2.40 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	10.2 MPa @Strain 3.00 %, Temperature 150 °C	1480 psi @Strain 3.00 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	16.1 MPa @Strain 6.00 %, Temperature 150 °C	2340 psi @Strain 6.00 %, Temperature 302 °F	DAM; ISO 11403-1 -2
	19.5 MPa @Strain 0.600 %, Temperature 23.0 °C	2830 psi @Strain 0.600 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	36.9 MPa @Strain 1.10 %, Temperature -40.0 °C	5350 psi @Strain 1.10 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	72.1 MPa @Strain 2.60 %, Temperature 23.0 °C	10500 psi @Strain 2.60 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	76.8 MPa @Strain 2.90 %, Temperature 23.0 °C	11100 psi @Strain 2.90 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	80.8 MPa @Strain 3.20 %, Temperature 23.0 °C	11700 psi @Strain 3.20 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	88.7 MPa @Strain 2.90 %, Temperature -40.0 °C	12900 psi @Strain 2.90 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	110 MPa @Strain 4.10 %, Temperature -40.0 °C	16000 psi @Strain 4.10 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2

Mechanical Properties	Metric	English	Comments
	124.9 MPa @Strain 6.00 %, Temperature -40.0 °C	18120 psi @Strain 6.00 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
Tensile Strength, Yield	55.0 MPa	7980 psi	50%RH; ISO 527-1/-2
	84.0 MPa	12200 psi	DAM; ISO 527-1/-2
Elongation at Break	35 %	35 %	DAM; Nominal; ISO 527-1/-2
Elongation at Yield	4.3 %	4.3 %	DAM; ISO 527-1/-2
	29 %	29 %	50%RH; ISO 527-1/-2
Tensile Modulus	1.20 GPa	174 ksi	50%RH; ISO 527-1/-2
	3.10 GPa	450 ksi	DAM; ISO 527-1/-2
Flexural Modulus	2.80 GPa	406 ksi	DAM; ISO 178
Secant Modulus	0.178 GPa @Strain 19.0 %, Temperature 100 °C	25.8 ksi @Strain 19.0 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	0.301 GPa @Strain 8.50 %, Temperature 100 °C	43.7 ksi @Strain 8.50 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	0.402 GPa @Strain 4.10 %, Temperature 100 °C	58.4 ksi @Strain 4.10 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	0.471 GPa @Strain 2.10 %, Temperature 100 °C	68.4 ksi @Strain 2.10 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	0.536 GPa @Strain 1.10 %, Temperature 100 °C	77.8 ksi @Strain 1.10 %, Temperature 212 °F	DAM; ISO 11403-1 -2
	2.44 GPa @Strain 3.40 %, Temperature 23.0 °C	354 ksi @Strain 3.40 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	2.55 GPa @Strain 4.50 %, Temperature -40.0 °C	370 ksi @Strain 4.50 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	2.60 GPa @Strain 3.00 %, Temperature 23.0 °C	378 ksi @Strain 3.00 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2

Mechanical Properties	Metric	English	Comments
	2.77 GPa @Strain 2.60 %, Temperature 23.0 °C	402 ksi @Strain 2.60 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	3.06 GPa @Strain 2.90 %, Temperature -40.0 °C	444 ksi @Strain 2.90 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
	3.25 GPa @Strain 0.600 %, Temperature 23.0 °C	471 ksi @Strain 0.600 %, Temperature 73.4 °F	DAM; ISO 11403-1 -2
	3.35 GPa @Strain 1.10 %, Temperature -40.0 °C	487 ksi @Strain 1.10 %, Temperature -40.0 °F	DAM; ISO 11403-1 -2
Izod Impact, Notched (ISO)	6.00 kJ/m²	2.86 ft-lb/in²	DAM; ISO 180/1A
Charpy Impact Unnotched	NB	NB	DAM; ISO 179/1eU
Charpy Impact, Notched	0.700 J/cm²	3.33 ft-lb/in²	DAM; ISO 179/1eA
	2.10 J/cm²	9.99 ft-lb/in²	50%RH; ISO 179/1eA
	0.400 J/cm² @Temperature -30.0 °C	1.90 ft-lb/in² @Temperature -22.0 °F	50%RH; ISO 179/1eA
	0.600 J/cm² @Temperature -30.0 °C	2.86 ft-lb/in² @Temperature -22.0 °F	DAM; ISO 179/1eA

Thermal Properties	Metric	English	Comments
Specific Heat Capacity	2.79 J/g-°C	0.667 BTU/lb-°F	
Thermal Conductivity	0.160 W/m-K	1.11 BTU-in/hr-ft²-°F	of melt
Melting Point	262 °C	504 °F	DAM; 10°C/min; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	200 °C	392 °F	DAM; ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	70.0 °C	158 °F	DAM; ISO 75-1/-2
Vicat Softening Point	221 °C	430 °F	DAM; 50°C/h 50N; ISO 306
Oxygen Index	20 %	20 %	DAM; ISO 4589-1/-2

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+13 ohm-cm	1.00e+13 ohm-cm	50%RH; IEC 60093

Electrical Properties	Metric	English	Comments
Comparative Tracking Index	600 V	600 V	DAM; IEC 60112

Descriptive Properties	Value	Comments
Additives	Release agent	
Delivery Form	Pellets	
Part Marking Code	>PA66<	ISO 11469
Processing	Casting	
	Coatable	
	Film Extrusion	
	Injection Moulding	
	Other Extrusion	
	Profile Extrusion	
	Sheet Extrusion	
Regional Availability	Asia Pacific	
	Europe	
	Global	
	Near East/Africa	
	North America	
	South and Central America	
Resin Identification	PA66	
Special Characteristics	Heat stabilised or stable to heat	

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