

DuPont Performance Polymers Zytel® 77G33HS1L NC010 Nylon 612

Category : Polymer , Thermoplastic , Nylon , Nylon 612 , Nylon 612, Glass Fiber Filler

Material Notes:

Zytel® 77G33HS1L NC010 is a 33% glass fiber reinforced, heat stabilized polyamide 612 resin for injection molding. Information provided by DuPont Performance Polymers

Order this product through the following link:

http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Zytel-77G33HS1L-NC010-Nylon-612.php

Physical Properties	Metric	English	Comments
Specific Gravity	1.32 g/cc	1.32 g/cc	DAM; ASTM D792
Density	1.32 g/cc	0.0477 lb/in ³	DAM; ISO 1183
Filler Content	33 %	33 %	DAM
Water Absorption	0.16 %	0.16 %	Immersion 24h; DAM; ASTM D570
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	2.0 %	2.0 %	Saturation; DAM; ASTM D570
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	0.70 %	0.70 %	Equilibrium 50%RH; DAM; ISO 62, Similar to
	@Thickness 1.00 mm, Temperature 23.0 °C	@Thickness 0.0394 in, Temperature 73.4 °F	
	1.8 %	1.8 %	Saturation, immersed; DAM; ISO 62, Similar to
	@Thickness 1.00 mm, Temperature 23.0 °C	@Thickness 0.0394 in, Temperature 73.4 °F	
Linear Mold Shrinkage	0.0010 cm/cm	0.0010 in/in	Flow; DAM
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	0.0020 cm/cm	0.0020 in/in	Flow; DAM
	@Thickness 3.20 mm	@Thickness 0.126 in	
	0.0040 cm/cm	0.0040 in/in	Flow; DAM
	@Thickness 6.40 mm	@Thickness 0.252 in	
	0.0090 cm/cm	0.0090 in/in	Transverse; DAM
	@Thickness 1.60 mm	@Thickness 0.0630 in	
	0.010 cm/cm	0.010 in/in	Transverse; DAM
	@Thickness 3.20 mm	@Thickness 0.126 in	
	0.011 cm/cm	0.011 in/in	

Physical Properties	Metric @ Thickness 6.40 mm	English @ Thickness 0.252 in	Transverse: DAM Comments
Linear Mold Shrinkage, Flow	0.0030 cm/cm @Thickness 2.00 mm	0.0030 in/in @Thickness 0.0787 in	DAM; ISO 294-4
Linear Mold Shrinkage, Transverse	0.0090 cm/cm @Thickness 2.00 mm	0.0090 in/in @Thickness 0.0787 in	DAM; ISO 294-4

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	118	118	DAM; ASTM D785
Tensile Strength at Break	140 MPa @Temperature 23.0 °C	20300 psi @Temperature 73.4 °F	50%RH; ISO 527
	168 MPa @Temperature 23.0 °C	24400 psi @Temperature 73.4 °F	DAM; ISO 527
Tensile Strength	138 MPa @Temperature 23.0 °C	20000 psi @Temperature 73.4 °F	50%RH; ASTM D638
	165 MPa @Temperature 23.0 °C	23900 psi @Temperature 73.4 °F	DAM; ASTM D638
Elongation at Break	3.0 % @Temperature 23.0 °C	3.0 % @Temperature 73.4 °F	DAM; ASTM D638
	3.0 % @Temperature 23.0 °C	3.0 % @Temperature 73.4 °F	DAM; ISO 527
	3.2 % @Temperature 23.0 °C	3.2 % @Temperature 73.4 °F	50%RH; ISO 527
	4.0 % @Temperature 23.0 °C	4.0 % @Temperature 73.4 °F	50%RH; ASTM D638
Tensile Modulus	7.90 GPa @Temperature 23.0 °C	1150 ksi @Temperature 73.4 °F	50%RH; ISO 527
	9.50 GPa @Temperature 23.0 °C	1380 ksi @Temperature 73.4 °F	DAM; ISO 527
Flexural Strength	255 MPa @Temperature 23.0 °C	37000 psi @Temperature 73.4 °F	DAM; ASTM D790
	6.20 GPa	899 ksi	

Flexural Modulus Mechanical Properties	Metric @ Temperature 23.0 °C	English @ Temperature 73.4 °F	50%RH- ASTM D790 Comments
	7.00 GPa @Temperature 23.0 °C	1020 ksi @Temperature 73.4 °F	50%RH; ISO 178
	8.20 GPa @Temperature 23.0 °C	1190 ksi @Temperature 73.4 °F	DAM; ISO 178
	8.27 GPa @Temperature 23.0 °C	1200 ksi @Temperature 73.4 °F	DAM; ASTM D790
Shear Strength	76.0 MPa @Temperature 23.0 °C	11000 psi @Temperature 73.4 °F	DAM; ASTM D732
Izod Impact, Notched	1.28 J/cm @Temperature 23.0 °C	2.40 ft-lb/in @Temperature 73.4 °F	DAM; ASTM D256
	1.33 J/cm @Temperature 23.0 °C	2.49 ft-lb/in @Temperature 73.4 °F	50%RH; ASTM D256
Izod Impact, Notched (ISO)	10.0 kJ/m ² @Temperature -40.0 °C	4.76 ft-lb/in ² @Temperature -40.0 °F	50%RH; ISO 180/1A
	10.0 kJ/m ² @Temperature -30.0 °C	4.76 ft-lb/in ² @Temperature -22.0 °F	50%RH; ISO 180/1A
	11.0 kJ/m ² @Temperature -40.0 °C	5.23 ft-lb/in ² @Temperature -40.0 °F	DAM; ISO 180/1A
	11.0 kJ/m ² @Temperature -30.0 °C	5.23 ft-lb/in ² @Temperature -22.0 °F	DAM; ISO 180/1A
	12.0 kJ/m ² @Temperature 23.0 °C	5.71 ft-lb/in ² @Temperature 73.4 °F	50%RH; ISO 180/1A
	13.0 kJ/m ² @Temperature 23.0 °C	6.19 ft-lb/in ² @Temperature 73.4 °F	DAM; ISO 180/1A
Izod Impact, Unnotched (ISO)	45.0 kJ/m ² @Temperature -30.0 °C	21.4 ft-lb/in ² @Temperature -22.0 °F	50%RH; ISO 180/1U
	60.0 kJ/m ² @Temperature -30.0 °C	28.6 ft-lb/in ² @Temperature -22.0 °F	DAM; ISO 180/1U
	60.0 kJ/m ² @Temperature 23.0 °C	28.6 ft-lb/in ² @Temperature 73.4 °F	50%RH; ISO 180/1U

Mechanical Properties	Metric	English	Comments
	@Temperature 23.0 °C	@Temperature 73.4 °F	DAM; ISO 180/1U
Charpy Impact Unnotched	6.00 J/cm ²	28.6 ft-lb/in ²	DAM; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	6.50 J/cm ²	30.9 ft-lb/in ²	50%RH; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	8.00 J/cm ²	38.1 ft-lb/in ²	DAM; ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	9.00 J/cm ²	42.8 ft-lb/in ²	50%RH; ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	1.00 J/cm ²	4.76 ft-lb/in ²	50%RH; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	1.00 J/cm ²	4.76 ft-lb/in ²	50%RH; ISO 179/1eA
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	1.10 J/cm ²	5.23 ft-lb/in ²	DAM; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	1.20 J/cm ²	5.71 ft-lb/in ²	50%RH; ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	1.20 J/cm ²	5.71 ft-lb/in ²	DAM; ISO 179/1eA
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	1.30 J/cm ²	6.19 ft-lb/in ²	DAM; ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	500 µm/m-°C	278 µin/in-°F	DAM; ASTM E 831
	@Temperature -40.0 - 23.0 °C	@Temperature -40.0 - 73.4 °F	

Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+12 ohm-cm	1.00e+12 ohm-cm	50%RH; ASTM D257
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	1.00e+15 ohm-cm	1.00e+15 ohm-cm	

Electrical Properties	Metric @ Temperature 23.0 °C	English @ Temperature 73.4 °F	DAM; ASTM D257 Comments
	1.00e+15 ohm-cm @Temperature 23.0 °C	1.00e+15 ohm-cm @Temperature 73.4 °F	DAM; IEC 60093
Surface Resistance	1.00e+15 ohm @Temperature 23.0 °C	1.00e+15 ohm @Temperature 73.4 °F	DAM; ASTM D257
Dielectric Constant	3.4 @Frequency 1.00e+6 Hz, Temperature 23.0 °C	3.4 @Frequency 1.00e+6 Hz, Temperature 73.4 °F	DAM; ASTM D150
	3.7 @Frequency 1000 Hz, Temperature 23.0 °C	3.7 @Frequency 1000 Hz, Temperature 73.4 °F	DAM; ASTM D150
Dielectric Strength	20.5 kV/mm @Thickness 3.20 mm, Temperature 23.0 °C	521 kV/in @Thickness 0.126 in, Temperature 73.4 °F	DAM; Short Time; ASTM D149
Dissipation Factor	0.020 @Frequency 1000 Hz, Temperature 23.0 °C	0.020 @Frequency 1000 Hz, Temperature 73.4 °F	DAM; ASTM D150
	0.020 @Frequency 1.00e+6 Hz, Temperature 23.0 °C	0.020 @Frequency 1.00e+6 Hz, Temperature 73.4 °F	DAM; ASTM D150
Comparative Tracking Index	>= 550 V @Temperature 23.0 °C	>= 550 V @Temperature 73.4 °F	DAM; UL 746A
	600 V @Temperature 23.0 °C	600 V @Temperature 73.4 °F	DAM; IEC 60112

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