

# DuPont™ Zytel®

nylon resin

## Zytel® 70G33HS1L NC010

Zytel® 70G33HS1L NC010 is a 33% glass fiber reinforced, heat stabilized polyamide 66 resin for injection molding.

Property	Test Method	Units	Value	
			DAM	50%RH
<b>Identification</b>				
Resin Identification	ISO 1043		PA66-GF33	
Part Marking Code	ISO 11469		>PA66-GF33<	
<b>Mechanical</b>				
Stress at Break	ISO 527	MPa (kpsi)	200 (29.0)	140 (20.3)
Strain at Break	ISO 527	%	3.5	5
Tensile Modulus	ISO 527	MPa (kpsi)	10500 (1520)	8000 (1160)
Flexural Modulus	ISO 178	MPa (kpsi)	9300 (1350)	6205 (900)
Flexural Strength	ISO 178	MPa (kpsi)	290 (42)	200 (29)
Notched Charpy Impact Strength	ISO 179/1eA	kJ/m <sup>2</sup>		
-40°C (-40°F)			10	10
-30°C (-22°F)			10	10
23°C (73°F)			13	17
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m <sup>2</sup>		
-30°C (-22°F)			70	75
23°C (73°F)			85	100

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.  
 ISO Mechanical properties measured at 4.0mm, ISO Electrical properties measured at 2.0mm, and all ASTM properties measured at 3.2mm.  
 Test temperatures are 23°C unless otherwise stated.

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			DAM	50%RH
<b>Thermal</b>				
Deflection Temperature 0.45MPa	ISO 75f	°C (°F)	261 (502)	
1.80MPa			252 (486)	
Melting Temperature 10°C/min	ISO 11357-1/-3	°C (°F)	262 (504)	
CLTE, Normal -40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C (E-4/F)	0.65 (0.36)	
23 - 55°C (73 - 130°F)			0.83 (0.46)	
55 - 160°C (130 - 320°F)			1.37 (0.76)	
CLTE, Parallel -40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C (E-4/F)	0.24 (0.13)	
23 - 55°C (73 - 130°F)			0.18 (0.10)	
55 - 160°C (130 - 320°F)			0.13 (0.07)	
<b>Electrical</b>				
Relative Permittivity 1E2 Hz	IEC 60250		4.2	
1E6 Hz			4.0	
Volume Resistivity	IEC 60093	ohm m	1E13	
Dissipation Factor 1E2 Hz	IEC 60250	E-4	100	
1E6 Hz			150	
Electric Strength 2.0mm	IEC 60243-1	kV/mm (V/mil)	27 (685)	
CTI 3.0mm	UL 746A	V	408	

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Property	Test Method	Units	Value	
			DAM	50%RH
<b>Flammability</b>				
Flammability Classification 0.71mm	UL94		HB	
Oxygen Index	ISO 4589-1/-2	%	24	
High Amperage Arc Ignition Resistance 0.71mm	UL 746A	arcs	>200	
High Voltage Arc Tracking Rate	UL 746A	mm/min (in/min)	32.2 (1.27)	
Hot Wire Ignition 0.71mm	UL 746A	s	14	
1.5mm			10	
3.0mm			150	
<b>Temperature Index</b>				
RTI, Electrical 0.71mm	UL 746B	°C	140	
RTI, Impact 0.71mm	UL 746B	°C	125	
RTI, Strength 0.71mm	UL 746B	°C	140	
<b>Other</b>				
Density	ISO 1183	kg/m <sup>3</sup> (g/cm <sup>3</sup> )	1390 (1.39)	
Water Absorption Equilibrium 50%RH	ISO 62, Similar to	%	1.8	
Immersion 24h, 2.0mm			1.2	
Saturation, immersed			5.7	
Molding Shrinkage Normal, 2.0mm	ISO 294-4	%	1.1	
Parallel, 2.0mm			0.3	

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Property	Test Method	Units	Value	
			DAM	50%RH
<b>Other</b>				
Mold Shrinkage		%		
Flow, 1.6mm (0.063in)			0.2	
Flow, 3.2mm (0.126in)			0.3	
Flow, 6.4mm (0.25in)			0.5	
Transverse, 1.6mm (0.063in)			1.0	
Transverse, 3.2mm (0.126in)			1.0	
Transverse, 6.4mm (0.25in)			1.1	
<b>Processing</b>				
Melt Temperature Range		°C (°F)	285-305 (545-580)	
Melt Temperature Optimum		°C (°F)	295 (565)	
Mold Temperature Range		°C (°F)	70-120 (160-250)	
Mold Temperature Optimum		°C (°F)	100 (210)	
Drying Time, Dehumidified Dryer		h	2-4	
Drying Temperature		°C (°F)	80 (175)	
Processing Moisture Content		%	<0.20	

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