

DuPont™ Zytel®

nylon resin

Zytel® 77G33L NC010

Zytel® 77G33L NC010 is a 33% glass fiber reinforced polyamide 612 resin for injection molding.

Property	Test Method	Units	Value	
			DAM	50%RH
Identification				
Resin Identification	ISO 1043		PA612-GF33	
Part Marking Code	ISO 11469		>PA612-GF33<	
Mechanical				
Stress at Break	ISO 527	MPa (kpsi)	168 (24.4)	140 (20.3)
Strain at Break	ISO 527	%	3.2	3.2
Tensile Modulus	ISO 527	MPa (kpsi)	9500 (1380)	7900 (1150)
Poisson's Ratio			0.39	
Flexural Modulus	ISO 178	MPa (kpsi)	8200 (1190)	7000 (1015)
Notched Charpy Impact Strength	ISO 179/1eA	kJ/m ²		
-40°C (-40°F)			12	10
-30°C (-22°F)			11	10
23°C (73°F)			13	12
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m ²		
-30°C (-22°F)			60	65
23°C (73°F)			80	90

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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Thermal				
Deflection Temperature 0.45MPa	ISO 75f	°C (°F)	216 (421)	
1.80MPa			200 (392)	
Melting Temperature 10°C/min	ISO 11357-1/-3	°C (°F)	218 (424)	
CLTE, Normal -40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C (E-4/F)	0.83 (0.46)	
23 - 55°C (73 - 130°F)			1.13 (0.63)	
55 - 160°C (130 - 320°F)			1.58 (0.88)	
CLTE, Parallel -40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C (E-4/F)	0.26 (0.14)	
23 - 55°C (73 - 130°F)			0.17 (0.09)	
55 - 160°C (130 - 320°F)			0.16 (0.09)	
Electrical				
Surface Resistivity	IEC 60093	ohm	1E12	
Relative Permittivity	IEC 60250		4.1	
1E2 Hz			3.8	
1E6 Hz				
Volume Resistivity	IEC 60093	ohm m	1E13	
Dissipation Factor	IEC 60250	E-4	135	
1E2 Hz			150	
1E6 Hz				
Electric Strength 2.0mm	IEC 60243-1	kV/mm (V/mil)	27 (686)	
Arc Resistance 3.0mm	UL 746A	s	145	
CTI	IEC 60112	V	600	
CTI 3.0mm	UL 746A	V	>600	600

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Flammability				
Flammability Classification 0.71mm	IEC 60695-11-10		HB	
Flammability Classification 0.71mm	UL94		HB	
Oxygen Index	ISO 4589-1/-2	%	23	
Glow Wire Flammability Index 0.71mm	IEC 60695-2-12	°C	675	
1.5mm			675	
3.0mm			700	
Glow Wire Ignition Temperature 0.71mm	IEC 60695-2-13	°C	700	
1.5mm			700	
3.0mm			725	
High Amperage Arc Ignition Resistance 0.71mm	UL 746A	arcs	200	
1.5mm			>200	
3.0mm			>200	
High Voltage Arc Tracking Rate	UL 746A	mm/min (in/min)	19.3 (0.76)	
Hot Wire Ignition 0.71mm	UL 746A	s	8	
1.5mm			17	
3.0mm			20	
Temperature Index				
RTI, Electrical 0.71mm	UL 746B	°C	105	
1.5mm			120	
RTI, Strength 1.5mm	UL 746B	°C	120	

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Other				
Density	ISO 1183	kg/m ³ (g/cm ³)	1320 (1.32)	
Water Absorption	ISO 62, Similar to	%		
Equilibrium 50%RH			0.7	
Immersion 24h			0.3	
Saturation, immersed			1.8	
Molding Shrinkage	ISO 294-4	%		
Normal, 2.0mm			0.9	
Parallel, 2.0mm			0.3	
Mold Shrinkage		%		
Flow, 1.6mm (0.063in)			0.1	
Flow, 3.2mm (0.126in)			0.2	
Flow, 6.4mm (0.25in)			0.4	
Transverse, 1.6mm (0.063in)			0.9	
Transverse, 3.2mm (0.126in)			1.0	
Transverse, 6.4mm (0.25in)			1.1	
Processing				
Melt Temperature Range		°C (°F)	280-300 (535-570)	
Melt Temperature Optimum		°C (°F)	290 (555)	
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		%	<0.15	

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