

Product Information

DuPont™ Zytel®
nylon resin



Zytel® 70G13L NC010
Glass Reinforced Nylon Resin

Zytel® 70G13L NC010 is a 13% glass reinforced general purpose PA 66 resin.

Property	Test Method	Units	Value	
			DAM	50%RH
Identification				
Resin Identification	ISO 1043-1/-2/-3/-4		PA66-GF13	
Part Marking Code	ISO 11469		>PA66-GF13<	
Mechanical				
Stress at Break	ISO 527-1/-2	MPa (kpsi)	120 (17.4)	75 (10.9)
Tensile Strength	ASTM D 638	MPa (kpsi)	121 (17.5)	83 (12.0)
Strain at Break	ISO 527-1/-2	%	3	13
Elongation at Break	ASTM D 638	%	3	8
Tensile Modulus	ISO 527-1/-2	MPa (kpsi)	5500 (798)	3500 (508)
Shear Strength	ASTM D 732	MPa (kpsi)	76 (11)	
Flexural Modulus	ASTM D 790	MPa (kpsi)	4830 (700)	2760 (400)
Flexural Modulus	ISO 178	MPa (kpsi)	4800 (696)	2900 (420)
Flexural Strength	ASTM D 790	MPa (kpsi)	165 (24.0)	
Deformation Under Load 50°C (122°F), 27.6MPa (4000psi)	ASTM D 621	%	1.1	
Notched Izod Impact Strength	ISO 180/1A	kJ/m ²		
-40°C (-40°F)			4	3
-30°C (-22°F)			4	3
23°C (73°F)			4.5	4

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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Mechanical				
Izod Impact	ASTM D 256	J/m (ft lb/in)	48 (0.9)	53 (1.0)
Unnotched Izod Impact Strength	ISO 180/1U	kJ/m ²		
-30°C (-22°F)			35	28
23°C (73°F)			40	55
Notched Charpy Impact Strength	ISO 179/1eA	kJ/m ²		
-40°C (-40°F)			4	4
-30°C (-22°F)			4	4
23°C (73°F)			4.5	6
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m ²		
-30°C (-22°F)			30	30
23°C (73°F)			32	70
Thermal				
Deflection Temperature	ISO 75-1/-2	°C (°F)		
0.45MPa			258 (496)	
1.80MPa			235 (455)	
Heat Deflection Temperature	ASTM D 648	°C (°F)		
1.8MPa (264psi)			243 (470)	
Melting Temperature	ISO 11357-1/-3	°C (°F)		
10°C/min			263 (505)	
Melting Point	ASTM D 3418	°C (°F)	263 (505)	
CLTE, Normal	ISO 11359-1/-2	E-4/C (E-4/F)		
-40 - 23°C (-40 - 73°F)			0.77 (0.43)	
23 - 55°C (73 - 130°F)			0.96 (0.53)	
55 - 160°C (130 - 320°F)			1.58 (0.88)	
CLTE, Parallel	ISO 11359-1/-2	E-4/C (E-4/F)		
-40 - 23°C (-40 - 73°F)			0.42 (0.23)	
23 - 55°C (73 - 130°F)			0.40 (0.22)	
55 - 160°C (130 - 320°F)			0.27 (0.15)	

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			DAM	50%RH
Electrical				
Relative Permittivity	IEC 60250			
1E2 Hz			3.9	
1E6 Hz			3.2	
Volume Resistivity	IEC 60093	ohm m	1E14	
Dissipation Factor	IEC 60250	E-4		
1E2 Hz			130	
1E6 Hz			150	
Electric Strength	IEC 60243-1	kV/mm (V/mil)		
2.0mm			25 (635)	
Arc Resistance	ASTM D 495	s	135	
CTI	IEC 60112	V	>600	
CTI	UL 746A	V	>600	
Flammability				
Flammability Classification	UL94			
0.71mm			HB	
Oxygen Index	ISO 4589-1/-2	%	24	
Glow Wire Flammability Index	IEC 60695-2-12	°C		
0.75mm			650	
1.5mm			650	
3.0mm			800	
Glow Wire Ignition Temperature	IEC 60695-2-13	°C		
0.75mm			675	
High Amperage Arc Ignition Resistance	UL 746A	arcs		
0.71mm			>200	
High Voltage Arc Tracking Rate	UL 746A	mm/min (in/min)	32.2 (1.27)	

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			DAM	50%RH
Flammability				
Hot Wire Ignition	UL 746A	s		
0.71mm			12	
1.5mm			7	
3.0mm			8	
Temperature Index				
RTI, Electrical	UL 746B	°C	125	
0.71mm				
RTI, Impact	UL 746B	°C	120	
0.71mm				
RTI, Strength	UL 746B	°C	125	
0.71mm				
Other				
Specific Gravity	ASTM D 792	kg/m ³ (g/cm ³)	1.22	
Density	ISO 1183		1230 (1.23)	
Hardness, Rockwell	ASTM D 785			
Scale M			95	84
Scale R			122	113
Taber Abrasion				
CS-17 Wheel, 1kg, 1000 cycles	ASTM D 1044	mg		12
Water Absorption	ASTM D 570	%		
Saturation			7.1	
Water Absorption	ISO 62, Similar to	%		
Equilibrium 50%RH, 2.0mm			2.2	
Immersion 24h, 2.0mm			1.7	
Saturation, immersed, 2.0mm			7.6	
Molding Shrinkage	ISO 294-4	%		
Normal, 2.0mm			1.2	
Parallel, 2.0mm			0.7	

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			DAM	50%RH
Other				
Mold Shrinkage		%		
Flow, 1.6mm (0.063in)			0.6	
Flow, 3.2mm (0.126in)			0.7	
Flow, 6.4mm (0.25in)			0.9	
Transverse, 1.6mm (0.063in)			1.2	
Transverse, 3.2mm (0.126in)			1.4	
Transverse, 6.4mm (0.25in)			1.7	
Processing				
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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