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
Mechanical				
Tensile Strength	ASTM D 638	MPa (kpsi)	121 (17.5)	83 (12.0)
Stress at Break	ISO 527-1/-2	MPa (kpsi)	120 (17.4)	75 (10.9)
Elongation at Break	ASTM D 638	%	3	8
Strain at Break	ISO 527-1/-2	%	3	13
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	ASTM D 621	%		
50C (122F), 27.6MPa (4000psi)			1.1	
Izod Impact	ASTM D 256	J/m (ft lb/in)	48 (0.9)	53 (1.0)
Notched Izod Impact	ISO 180/1A	kJ/m2		
-40C (-40F)			4	3
-30C (-22F)			4	3
23C (73F)			4.5	4
Unnotched Izod Impact	ISO 180/1U	kJ/m2		
-30C (-22F)			35	28
23C (73F)			40	55
Notched Charpy Impact	ISO 179/1eA	kJ/m2		
-40C (-40F)			4	4
-30C (-22F)			4	4
23C (73F)			4.5	6
Unnotched Charpy Impact	ISO 179/1eU	kJ/m2		
-30C (-22F)			30	30
23C (73F)			32	70

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Mechanical properties measured at 23°C (73°F) unless otherwise stated.

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			DAM	50%RH
Thermal				
Heat Deflection Temperature	ASTM D 648	°C (°F)		
1.8MPa (264psi)			243 (470)	
Deflection Temperature	ISO 75-1/-2	°C (°F)		
0.45MPa			258 (496)	
1.80MPa			235 (425)	
CLTE, Parallel	ASTM E 831	E-4/C (E-4/F)		
-40 - 23C (-40 - 73F)			0.42 (0.23)	
23 - 55C (73 - 130F)			0.40 (0.22)	
55 - 160C (130 - 320F)			0.27 (0.15)	
CLTE, Normal	ASTM E 831	E-4/C (E-4/F)		
-40 - 23C (-40 - 73F)			0.77 (0.43)	
23 - 55C (73 - 130F)			0.96 (0.53)	
55 - 160C (130 - 320F)			1.58 (0.88)	
Melting Point	ASTM D 3418	°C (°F)	262 (504)	
Melting Temperature	ISO 3146C	°C (°F)	263 (505)	
Electrical				
Relative Permittivity	IEC 60250			
1E2 Hz			3.9	
1E6 Hz			3.2	
Volume Resistivity	IEC 60093	ohm cm	1E 16	
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	
1.5mm			HB	
3.0mm			HB	
Limited Oxygen Index	ISO 4589	%	24	
High Amperage Arc Ignition Resistance	UL 746A	arcs	>200	
High Voltage Arc Tracking Rate	UL 746A	mm/min (in/min)	32.2 (1.27)	
Hot Wire Ignition	UL 746A	s	9	

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Property	Test Method	Units	Value	
			DAM	50%RH
Temperature Index				
RTI, Electrical	UL 746B	°C		
0.71mm			105	
1.5mm			120	
3.0mm			120	
RTI, Mechanical with Impact	UL 746B	°C		
0.71mm			65	
1.5mm			105	
3.0mm			105	
RTI, Mechanical without Impact	UL 746B	°C		
0.71mm			105	
1.5mm			120	
3.0mm			120	
Other				
Specific Gravity	ASTM D 792		1.22	
Density	ISO 1183	kg/m3 (g/cm3)	1230 (1.23)	
Hardness, Rockwell	ASTM D 785			
Scale M			95	84
Scale R			122	113
Taber Abrasion	ASTM D 1044	mg		
CS-17 Wheel, 1kg, 1000 cycles				12
Humidity Absorption	ISO 62, Similar to	%		
Equilibrium 50%RH, 2.0mm			2.2	
Water Absorption	ASTM D 570	%		
Saturation			7.1	
Water Absorption	ISO 62, Similar to	%		
Immersion 24h, 2.0mm			1.7	
Saturation, immersed, 2.0mm			7.6	
Mold Shrinkage		%		
Flow, 3.2mm (0.126in)			0.5	
Molding Shrinkage	ISO 294-4	%		
Normal, 2.0mm			1.2	
Parallel, 2.0mm			0.7	
Processing				
Melt Temperature Range		°C (°F)	290-305 (550-580)	
Mold Temperature Range		°C (°F)	65-120 (150-250)	
Processing Moisture Content		%	<0.20	

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