



Zytel®

nylon resin

Zytel® 42A NC010

Nylon Resin

Zytel® 42A NC010 is a high viscosity molding and extrusion grade PA 66 resin, suitable for film and tubing applications.

Property	Test Method	Units	Value	
			DAM	50%RH
Mechanical				
Tensile Strength	ASTM D 638	MPa (kpsi)		
-40C (-40F)			117.2 (17.0)	111 (16.1)
23C (73F)			85.5 (12.4)	77.2 (11.2)
77C (170F)			58.6 (8.5)	40.7 (5.9)
121C (250F)			43.4 (6.3)	32.4 (4.7)
Tensile Strength at Yield	ASTM D 638	MPa (kpsi)		
-40C (-40F)			117.2 (17.0)	111 (16.1)
23C (73F)			85.5 (12.4)	59.3 (8.6)
77C (170F)			58.6 (8.5)	40.7 (5.9)
121C (250F)			35.1 (5.1)	32.4 (4.7)
Elongation at Yield	ASTM D 638	%		
-40C (-40F)				5
23C (73F)			5	30
77C (170F)			30	30
121C (250F)			30	30
Elongation at Break	ASTM D 638	%		
-40C (-40F)			15	35
23C (73F)			90	>300
77C (170F)			155	>300
121C (250F)			200	>300
Shear Strength	ASTM D 732	MPa (kpsi)	66.2 (9.6)	63.4 (9.1)
Flexural Modulus	ASTM D 790	MPa (kpsi)		
-40C (-40F)			3241 (470)	3447 (500)
23C (73F)			2827 (410)	1207 (175)
77C (170F)			690 (100)	565 (82)
121C (250F)			538 (78)	414 (60)

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.
Mechanical properties measured at 23°C (73°F) unless otherwise stated.

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			DAM	50%RH
Mechanical				
Tensile Impact Strength Long specimen	ASTM D 1822	kJ/m2 (ft lb/in2)	535 (255)	
Izod Impact -40C (-40F) 23C (73F)	ASTM D 256	J/m (ft lb/in)	32 (0.6) 64 (1.2)	27 (0.5) 133 (2.5)
Thermal				
Heat Deflection Temperature 0.45MPa (66psi) 1.8MPa (264psi)	ASTM D 648	°C (°F)	210 (410) 65 (149)	
CLTE, Parallel	ASTM D 696	E-4/C (E-4/F)	0.7 (0.39)	
Melting Point	ASTM D 3418	°C (°F)	263 (505)	
Thermal Conductivity Conco-Fitch apparatus	ASTM C 177	W/m K (Btu in/h ft2 F)	0.25 (1.7)	
Electrical				
Volume Resistivity	ASTM D 257	ohm cm	1 E15	1 E13
Dielectric Constant	ASTM D 150			
1E2 Hz			4.0	8.0
1E3 Hz			3.9	7.0
1E6 Hz			3.6	4.6
Dissipation Factor	ASTM D 150			
1E2 Hz			0.01	0.20
1E3 Hz			0.02	0.20
1E6 Hz			0.02	0.10
Arc Resistance	ASTM D 495	s	116	
CTI	UL 746A	V	>600	
Flammability				
Flammability Classification	UL94			
0.71mm (0.028in)			HB	
1.5mm			HB	
3.0mm			V-2	
6.0mm			V-2	
Rating @ Thickness	UL94		HB	
Thickness Tested	UL94	mm	0.71	
High Amperage Arc Ignition Resistance	UL 746A	arcs	182	
High Voltage Arc Tracking Rate	UL 746A	mm/min (in/min)	25.9 (1.02)	
Hot Wire Ignition	UL 746A	s	35	
Temperature Index				
RTI, Electrical	UL 746B	°C		
0.71mm			125	
1.5mm			125	
3.0mm			125	
6.0mm			125	

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			DAM	50%RH
Temperature Index				
RTI, Mechanical with Impact	UL 746B	°C		
0.71mm			65	
1.5mm			75	
3.0mm			75	
6.0mm	UL 746B	°C	75	
RTI, Mechanical without Impact				
0.71mm			65	
1.5mm			85	
3.0mm			85	
6.0mm			85	
Other				
Specific Gravity	ASTM D 792		1.14	
Hardness, Rockwell	ASTM D 785			
Scale M			80	60
Scale R			121	108
Taber Abrasion	ASTM D 1044	mg		
CS-17 Wheel, 1kg, 1000 cycles				4
Water Absorption	ASTM D 570	%		
Immersion 24h			1.2	
Saturation			8.5	
Mold Shrinkage		%		
Flow, 3.2mm (0.126in)			1.5	
Brittleness Temperature	ASTM D 746	°C (°F)	-100 (-148)	-85 (-121)
Processing				
Melt Temperature Range		°C (°F)	280-305 (530-550)	
Drying Time, Dehumidified Dryer		h	2-4	
Drying Temperature		°C (°F)	80 (175)	
Processing Moisture Content		%	<0.05	

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