

DuPont™ Zytel® HTN

high performance polyamide resin

Zytel® HTNFR51G35L NC010

Zytel® HTNFR51G35L NC010 is a 35% glass reinforced, flame retardant, lubricated high performance polyamide resin. It is also a PPA resin.

Property	Test Method	Units	Value	
			DAM	50%RH
Identification				
Part Marking Code	ISO 11469		>PA6T/XT-GF35FR<	
Part Marking Code	SAE J1344		>PPA-GF35FR<	
Mechanical				
Stress at Break	ISO 527	MPa (kpsi)	165 (24)	
Strain at Break	ISO 527	%	1.6	
Tensile Modulus	ISO 527	MPa (kpsi)	13000 (1885)	
Shear Strength	ASTM D 732	MPa (kpsi)	64 (9.3)	70 (10)
Flexural Modulus	ISO 178	MPa (kpsi)	12000 (1740)	12000 (1740)
Flexural Strength	ISO 178	MPa (kpsi)	250 (36)	235 (34)
Compressive Strength	ASTM D 695	MPa (kpsi)	293 (42.6)	
Compressive Modulus	ASTM D 695	MPa (kpsi)	3580 (520)	
Notched Charpy Impact Strength	ISO 179/1eA	kJ/m ²		
-30°C (-22°F)			13	
23°C (73°F)			11	
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m ²		
-30°C (-22°F)			30	
23°C (73°F)			40	

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.

During molding, use proper protective equipment and adequate ventilation. Avoid exposure to fumes and limit the hold up time and temperature of the resin in the machine. Purge degraded resin carefully with HDPE.

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			DAM	50%RH
Thermal				
Deflection Temperature 0.45MPa	ISO 75-1/-2	°C (°F)	270 (518)	
1.80MPa			260 (500)	
Melting Temperature 10°C/min, First Heat	ISO 11357-1/-3	°C (°F)	300 (574)	
CLTE, Parallel -40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C (E-4/F)	0.20 (0.11)	
23 - 55°C (73 - 130°F)			0.18 (0.10)	
55 - 125°C (131 - 257°F)			0.18 (0.10)	
CLTE, Normal -40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C (E-4/F)	0.46 (0.26)	
23 - 55°C (73 - 130°F)			0.50 (0.28)	
55 - 125°C (131 - 257°F)			0.60 (0.33)	
Glass Transition Temperature	DMA	°C (°F)	140 (284)	90 (194)
Electrical				
Surface Resistivity	IEC 60093	ohm	1E13	
Volume Resistivity	IEC 60093	ohm m	>1E13	1E13
Electric Strength 1.0mm	IEC 60243-1	kV/mm (V/mil)	34 (863)	34 (863)
Relative Permittivity 1E2 Hz	IEC 60250		3.9	
1E3 Hz			3.8	
1E6 Hz			3.6	
Dissipation Factor 1E2 Hz	IEC 60250	E-4	80	
1E3 Hz			130	
1E6 Hz			150	
Arc Resistance	ASTM D 495	s	80	
CTI	IEC 60112	V	525	

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Product Information

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			DAM	50%RH
Flammability				
Flammability Classification	UL94			
0.81mm			V-0	
Oxygen Index	ISO 4589-1/-2	%	37	
Hot Wire Ignition	UL 746A	s		
0.81mm			>150	
1.5mm			>150	
3.0mm			>150	
Temperature Index				
RTI, Electrical	UL 746B	°C		
0.81mm			150	
1.5mm			150	
3.0mm			150	
RTI, Impact	UL 746B	°C		
0.81mm			120	
1.5mm			125	
3.0mm			130	
RTI, Strength	UL 746B	°C		
0.81mm			130	
1.5mm			130	
3.0mm			150	

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			DAM	50%RH
Other				
Density	ISO 1183	kg/m ³ (g/cm ³)	1680 (1.68)	
Hardness, Rockwell	ASTM D 785			
Scale M			108	
Scale R			124	
Taber Abrasion	ASTM D 1044	mg		
CS-17 Wheel, 1kg, 1000 cycles			57	
Water Absorption	ASTM D 570	%		
Immersion 24h			0.25	
Molding Shrinkage	ISO 294-4	%		
Normal, 2.0mm			0.5	
Parallel, 2.0mm			0.2	
Processing				
Melt Temperature Range		°C (°F)	320-330 (610-625)	
Mold Temperature Range		°C (°F)	140-160 (280-320)	
Drying Time, Dehumidified Dryer		h	6-8	
Drying Temperature		°C (°F)	100 (210)	
Processing Moisture Content		%	<0.10	

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