Zytel® HTNFR52G45NHF NC010 (PRELIMINARY)

HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTNFR52G45NHF NC010 is a 45% Glass Reinforced, Flame Retardant, High Performance Polyamide with improved flow. It is also a PPA resin and it uses a non-halogenated flame retardant.

Product information

Resin Identification	PA6T/66-GF45 FR(40)	ISO 1043
Part Marking Code	>PA6T/66-GF45 FR(40)<	ISO 11469
Part Marking Code	>PPA-GF45 FR<	SAE J1344
ISO designation	ISO 16396-PA6T/66,GF45 FR(40),M1F1GN,S10-160	

Rheological properties

	dry/cond.		
Molding shrinkage, parallel	0.2 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.6 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	2.25E6 / -	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	24200 / -	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.7 / -	%	ISO 527-1/-2
Flexural modulus	2.19E6 / -	psi	ISO 178
Flexural strength	36100 / -	psi	ISO 178
Charpy impact strength, 23°C	22.8 / -	ftlb/in²	ISO 179/1eU
Charpy impact strength, -30°C	21.4 / -	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23°C	3.81 / -	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -30°C	3.81 / -	ftlb/in²	ISO 179/1eA

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	590 / *	°F	ISO 11357-1/-3
Melting temperature, first heat	590 / *	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	194 / 113	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	543 / *	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.08 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel, -40-23°C	0.0722 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel, 55-160°C	0.0778 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.278 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal, -40-23°C	0.239 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal, 55-160°C	0.444 / *	E-4/°F	ISO 11359-1/-2
RTI, electrical, 0.4mm	284	°F	UL 746B
RTI, electrical, 0.75mm	284	°F	UL 746B
RTI, electrical, 1.5mm	284	°F	UL 746B
RTI, electrical, 3.0mm	284	°F	UL 746B

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RTI, strength, 0.75mm	257	°F	UL 746B
RTI, strength, 1.5mm	257 / *	°F	UL 746B
RTI, strength, 3.0mm	266	°F	UL 746B

Flammability

	dry/cond.		
Burning Behav. at thickness h	V-0 / *	class	IEC 60695-11-10
Thickness tested	0.0157 / *	in	IEC 60695-11-10
UL recognition	yes / *		UL 94
Glow Wire Flammability Index, 0.4mm	1760 / -	°F	IEC 60695-2-12
Glow Wire Flammability Index, 0.75mm	1760 / -	°F	IEC 60695-2-12
Glow Wire Flammability Index, 1.5mm	1760 / -	°F	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	1760 / -	°F	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	1380 / -	°F	IEC 60695-2-13
Glow Wire Ignition Temperature, 0.4mm	1290 / -	°F	IEC 60695-2-12
Glow Wire Ignition Temperature, 1.5mm	1380 / -	°F	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	1470 / -	°F	IEC 60695-2-13

Electrical properties

	dry/cond.		
Relative permittivity, 100Hz	4.7 / -		IEC 62631-2-1
Relative permittivity, 1MHz	4.4 / -		IEC 62631-2-1
Dissipation factor, 100Hz	60 / -	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	115 / -	E-4	IEC 62631-2-1
Volume resistivity	>1E13 / -	Ohm.m	IEC 62631-3-1
Electric strength	1020 / -	kV/in	IEC 60243-1
Comparative tracking index	600 / -		IEC 60112

Physical/Other properties

	dry/cond.		
Density	0.0578 / -	lb/in^3	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	212	°F
Drying Time, Dehumidified Dryer	6 - 8	h
Processing Moisture Content	≤0.1	%
Min. melt temperature	608	°F
Max. melt temperature	617	°F
Min. mold temperature	194	°F
Max. mold temperature	266	°F
Hold Pressure Time (h is the max. wall thickness of the part in mm)	h^2+2	s

Characteristics

Processing	Injection Molding
Additives	Flame retardant, Non-halogenated/Red phosphorus free flame retardant
Special characteristics	Flame retardant, Lead-free soldering resistant

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Additional information

Injection molding	For molding machine components, use corrosion resistant and wear resistant steel. For details please contact our representative. Limit the residence time of the resin in the machine. Use proper protective equipment and adequate ventilation.

Revised: 2025-07-08 Source: Celanese Materials Database

The above data are preliminary and are subject to change as additional data are developed on subsequent lots.
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