

Zytel® HTNFR55G50NHLW BK046

HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTN high performance polyamide resins feature high retention of properties upon exposure to elevated temperature, to high moisture, and to harsh chemical environments. Polymer families and grades of Zytel® HTN are tailored to optimize performance as well as processability.

Typical applications with Zytel® HTN include demanding applications in the automotive, electrical and electronics, domestic appliances, and construction industries.

Zytel® HTNFR55G50NHLW BK046 is a 50% glass reinforced, flame retardant high performance polyamide resin with improved flow and low warpage in structural applications requiring good surface appearance. It uses a non-halogenated flame retardant.

Product information

Resin Identification	PA-GF50FR(40)	ISO 1043
Part Marking Code	>PA-GF50FR(40)<	ISO 11469
Part Marking Code	>PPA-GF50FR<	SAE J1344
ISO designation	ISO 16396-PA,GF50 FR(40),M1CF1G,S10-190	

Rheological properties

	dry/cond.		
Viscosity number	70 / *	cm ³ /g	ISO 307, 1157, 1628
Moulding shrinkage, parallel	0.1 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.2 / -	%	ISO 294-4, 2577
Flow length	165 / *	mm	
Flow length - pressure	100 / *	MPa	
Flow length - width/thickness	1 / *	mm	

Typical mechanical properties

	dry/cond.		
Tensile Modulus	18000 / 19000	MPa	ISO 527-1/-2
Stress at break, 5mm/min	200 / 180	MPa	ISO 527-1/-2
Strain at break, 5mm/min	1.6 / 1.3	%	ISO 527-1/-2
Flexural Modulus	17000 / -	MPa	ISO 178
Flexural Strength	310 / -	MPa	ISO 178
Charpy impact strength, 23°C	50 / -	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	13 / -	kJ/m ²	ISO 179/1eA
Poisson's ratio	0.33 / 0.33		

Thermal properties

	dry/cond.		
Melting temperature, first heat	298 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	110 / -	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	220 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	13 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	38 / *	E-6/K	ISO 11359-1/-2
RTI, electrical, 0.4mm	65	°C	UL 746B
RTI, electrical, 0.75mm	65	°C	UL 746B
RTI, electrical, 1.5mm	65	°C	UL 746B



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RTI, electrical, 3mm	65	°C	UL 746B
RTI, impact, 0.4mm	65	°C	UL 746B
RTI, impact, 0.75mm	65	°C	UL 746B
RTI, impact, 1.5mm	65	°C	UL 746B
RTI, impact, 3mm	65	°C	UL 746B
RTI, strength, 0.4mm	65	°C	UL 746B
RTI, strength, 0.75mm	65	°C	UL 746B
RTI, strength, 1.5mm	65/*	°C	UL 746B
RTI, strength, 3mm	65	°C	UL 746B
TGA curve	available		ISO 11359-1/-2

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	V-0/*	class	UL 94
Thickness tested	1.5/*	mm	UL 94
UL recognition	yes/*		UL 94
Burning Behav. at thickness h	V-0/*	class	UL 94
Thickness tested	0.4/*	mm	UL 94
UL recognition	yes/*		UL 94
FMVSS Class	DNI		ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Comparative tracking index	600/-		IEC 60112
Dielectric Constant, 1 GHz	4.3/-		ASTM D 2520 B
Dielectric Constant, 10 GHz	4.4/-		ASTM D 2520 B / IPC-TM-650
Dissipation Factor, 1 GHz	116/-	E-4	ASTM D 2520 B
Dissipation Factor, 10 GHz	122/-	E-4	ASTM D 2520 B / IPC-TM-650

Other properties

	dry/cond.		
Water absorption, Immersion 24h	0.6/*	%	Sim. to ISO 62
Density	1650/-	kg/m³	ISO 1183

Injection

Drying Recommended	yes
Drying Temperature	100 °C
Drying Time, Dehumidified Dryer	6 - 8 h
Processing Moisture Content	≤0.1 %
Min. melt temperature	300 °C
Max. melt temperature	315 °C
Min. mould temperature	70 °C
Max. mould temperature	130 °C



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Characteristics

Additives

Flame retardant

Additional information

Injection molding

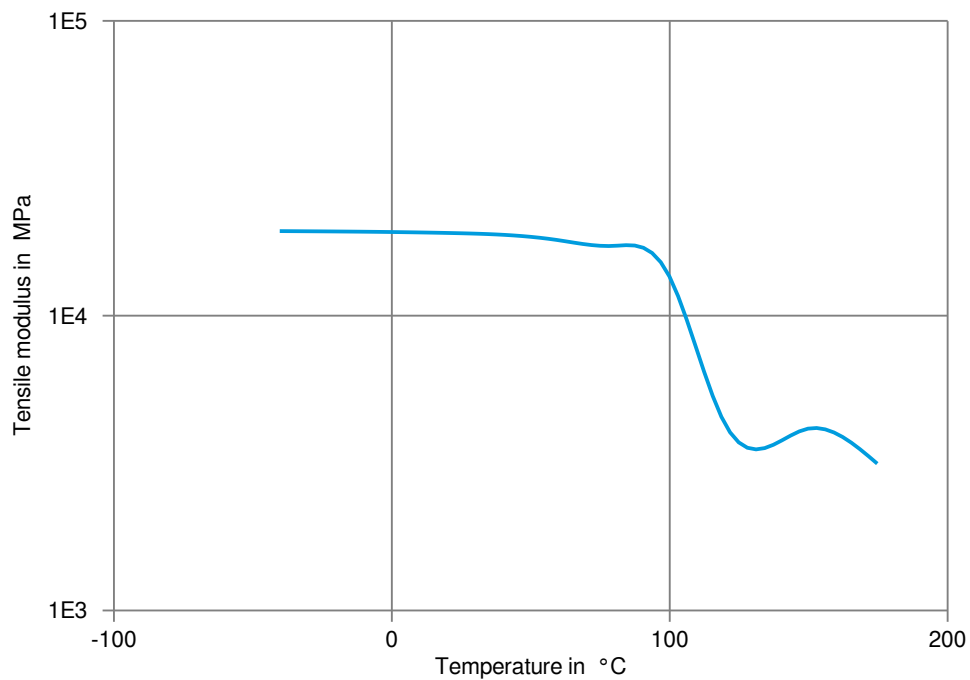
For molding machine components, use corrosion resistant and wear resistant steel. For details please contact our representative. Limit the residence time of the resin in the machine. Use proper protective equipment and adequate ventilation.



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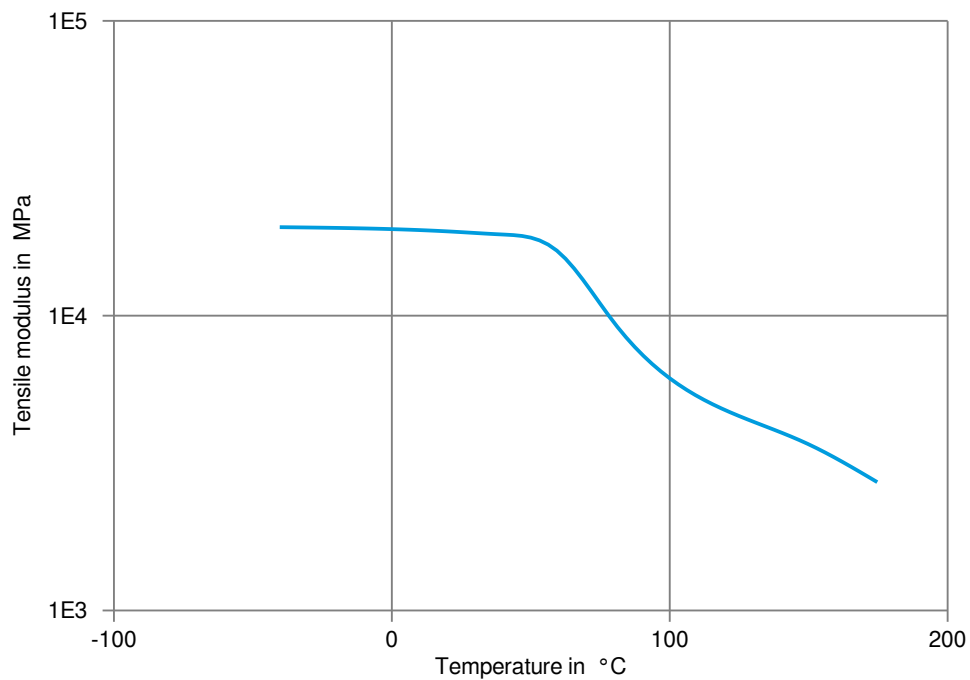
Tensile modulus-temperature (dry)



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Tensile modulus-temperature (cond.)



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HIGH PERFORMANCE POLYAMIDE RESIN

Dielectric strength - temperature (dry)

