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Zytel® HTNFR52G35NHF BK337

HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTNFR52G35NHF BK337 is a 35% Glass Reinforced, Flame Retardant, Non-Halogenated, PPA, High Performance Polyamide with Improved Flow

Product information

Resin Identification	PA(6T/66)-GF35FR(40)	ISO 1043
Part Marking Code	>PA(6T/66)-GF35FR(40)<	ISO 11469
Part Marking Code	>PPA-GF35FR<	SAE J1344
ISO designation	ISO 16396-PA6T/66,GF35 FR(40),M1CF1G,S10-120	

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.9 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	12800 / -	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	135 / -	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.4 / -	%	ISO 527-1/-2
Flexural modulus	11200 / -	MPa	ISO 178
Flexural strength	200 / -	MPa	ISO 178
Charpy notched impact strength, 23°C	8 / -	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	8 / -	kJ/m²	ISO 179/1eA
Poisson's ratio	0.33 / -		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	310 / *	°C	ISO 11357-1/-3
Melting temperature, first heat	310 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	90 / 45	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	283 / *	°C	ISO 75-1/-2
RTI, electrical, 0.75mm	140	°C	UL 746B
RTI, electrical, 1.5mm	140	°C	UL 746B
RTI, electrical, 3.0mm	140	°C	UL 746B
RTI, impact, 0.75mm	115	°C	UL 746B
RTI, impact, 1.5mm	115	°C	UL 746B
RTI, impact, 3.0mm	120	°C	UL 746B
RTI, strength, 0.75mm	125	°C	UL 746B
RTI, strength, 1.5mm	125 / *	°C	UL 746B
RTI, strength, 3.0mm	130	°C	UL 746B
TGA curve	available		ISO 11359-1/-2

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	V-0 / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	IEC 60695-11-10
UL recognition	yes / *		UL 94
Burning Behav. at thickness h	V-0 / *	class	IEC 60695-11-10
Thickness tested	0.75 / *	mm	IEC 60695-11-10

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UL recognition	yes / *		UL 94
Oxygen index	33 / *	%	ISO 4589-1/-2
Glow Wire Flammability Index, 0.75mm	960 / -	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5mm	960 / -	°C	IEC 60695-2-12
Glow Wire Flammability Index, 3.0mm	960 / -	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	775 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 1.5mm	775 / -	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	850 / -	°C	IEC 60695-2-13
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Relative permittivity, 100Hz	4.3 / -		IEC 62631-2-1
Relative permittivity, 1MHz	3.9 / -		IEC 62631-2-1
Dissipation factor, 100Hz	50 / -	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	110 / -	E-4	IEC 62631-2-1
Electric strength	31 / -	kV/mm	IEC 60243-1
Comparative tracking index	600 / -		IEC 60112
Comparative tracking index, 3.0mm	0 / -	PLC	UL 746A
Dielectric Constant, 1 GHz	3.9 / -		ASTM D 2520 B
Dielectric Constant, 23°C, 10 GHz	3.9 / -		ASTM D 2520 B / IPC-TM-650
Dissipation Factor, 1 GHz	110 / -	E-4	ASTM D 2520 B
Dissipation Factor, 23°C, 10 GHz	104 / -	E-4	ASTM D 2520 B / IPC-TM-650

Physical/Other properties

	dry/cond.		
Density	1490 / -	kg/m³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	100	°C
Drying Time, Dehumidified Dryer	6 - 8	h
Processing Moisture Content	≤0.1	%
Melt Temperature Optimum	323	°C
Min. melt temperature	320	°C
Max. melt temperature	325	°C
Mold Temperature Optimum	110	°C
Min. mould temperature	90	°C
Max. mould temperature	130	°C
Ejection temperature	259	°C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Flame retardant, Non-halogenated/Red phosphorous free flame retardant
Special characteristics	Flame retardant, Lead-free soldering resistant

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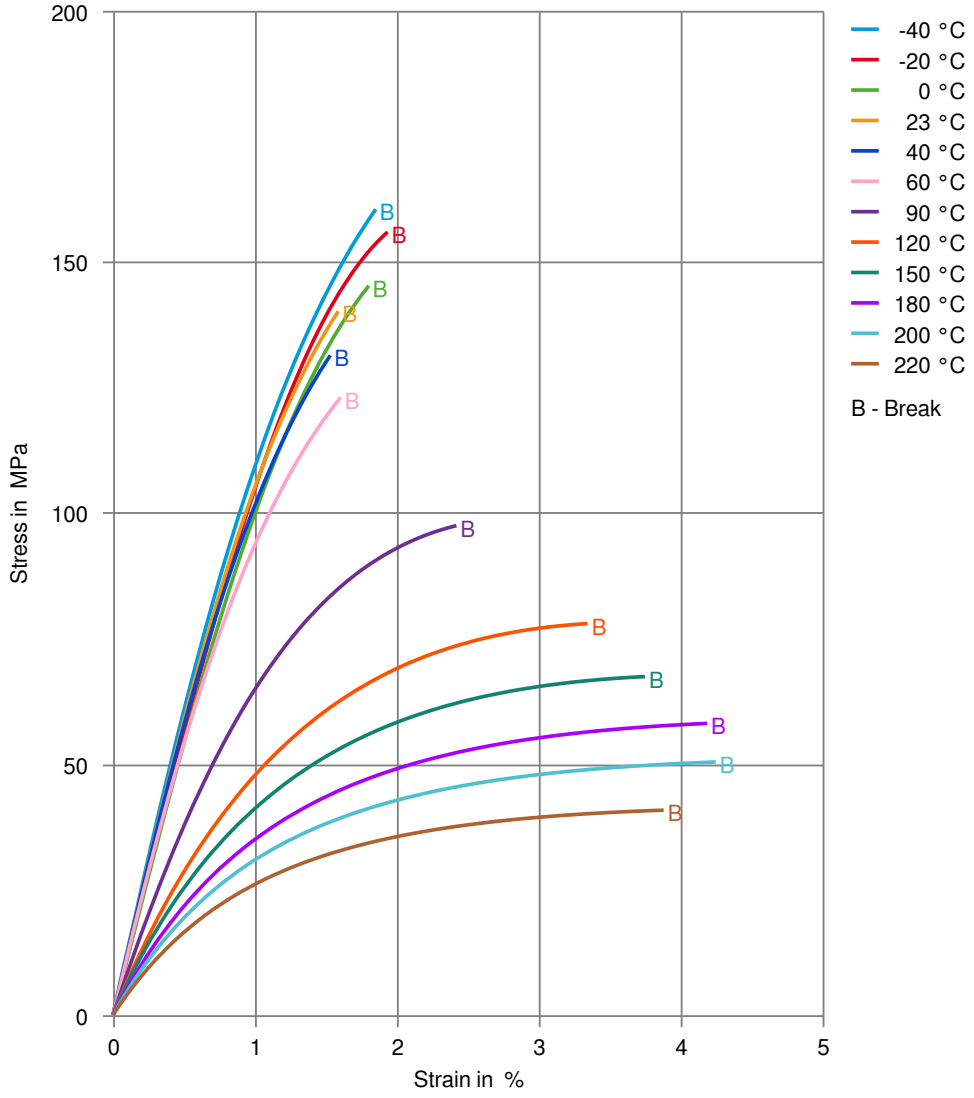
Additional information

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.

Stress-strain (dry)



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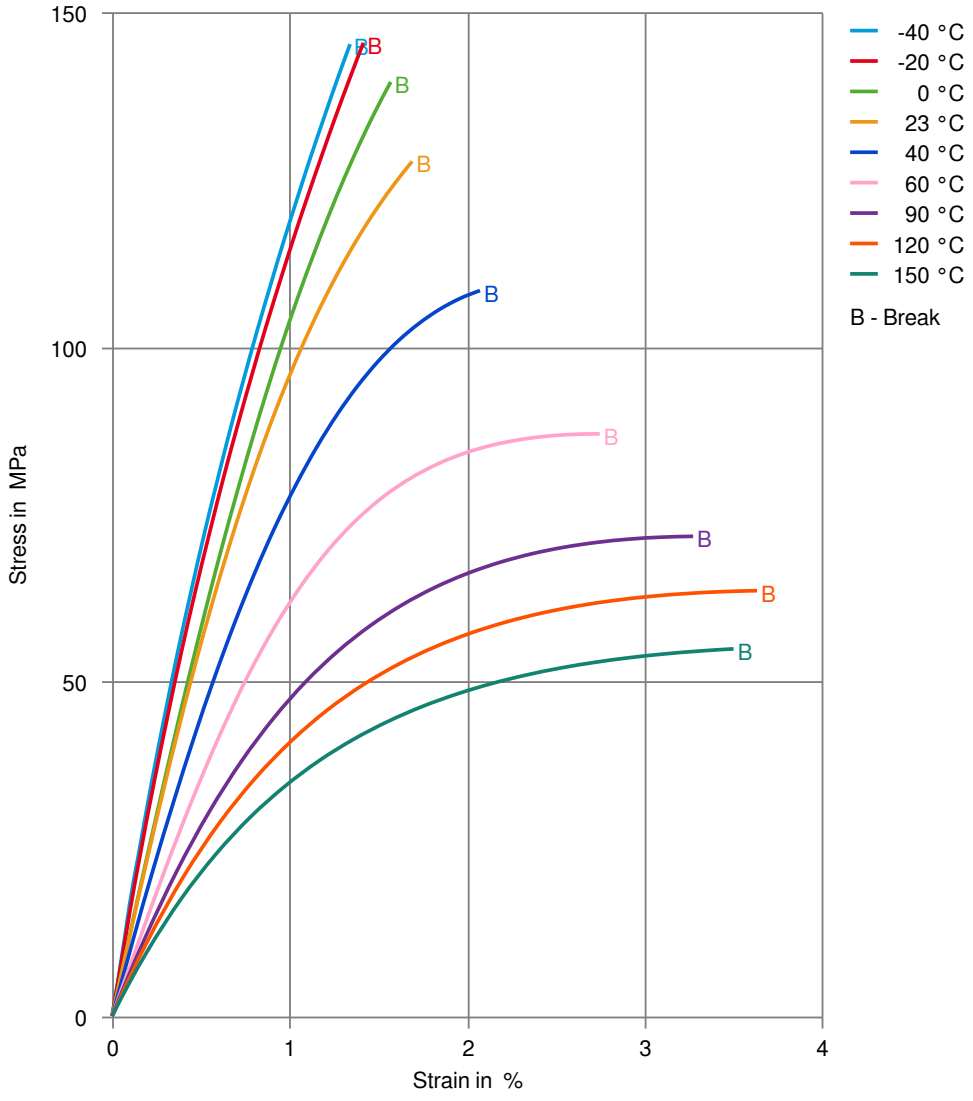
Stress-strain (cond.)



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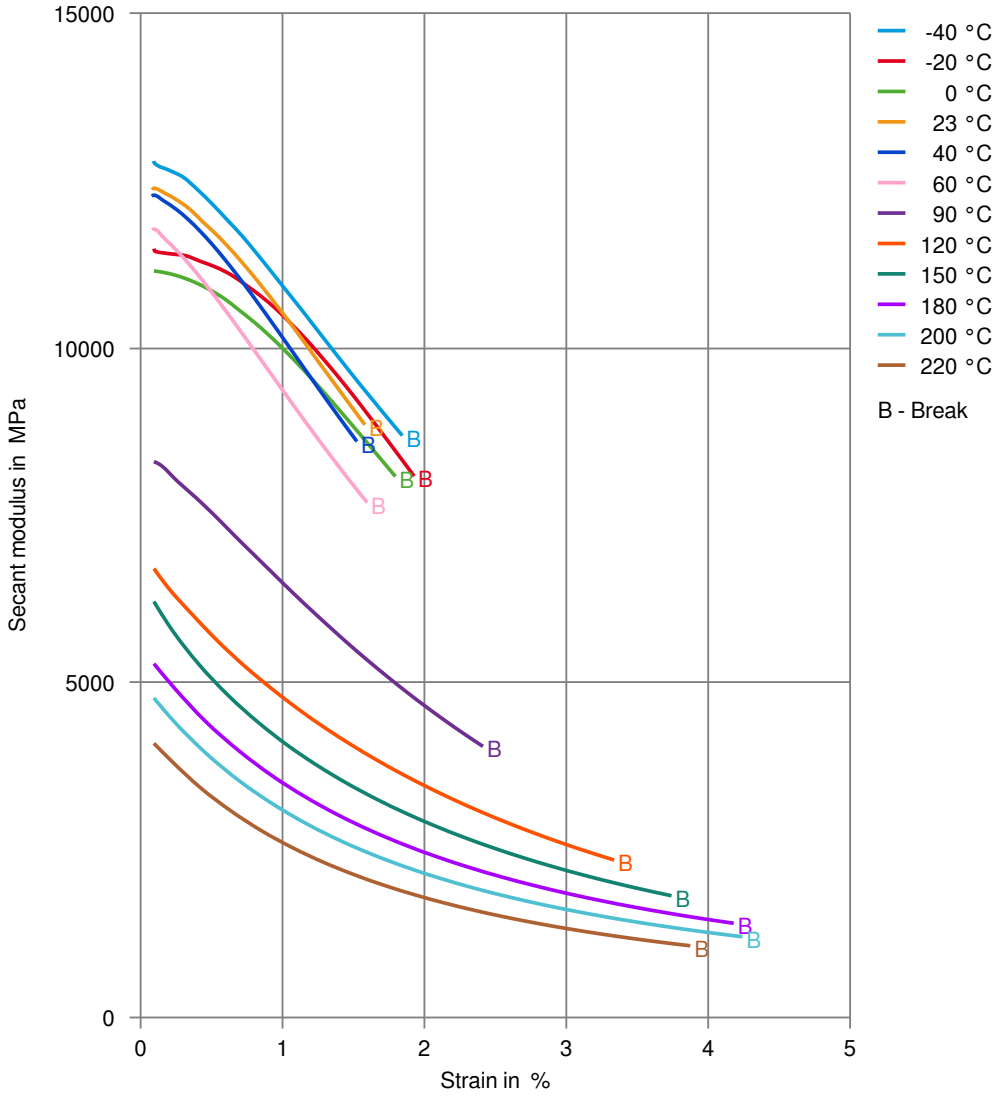
Secant modulus-strain (dry)



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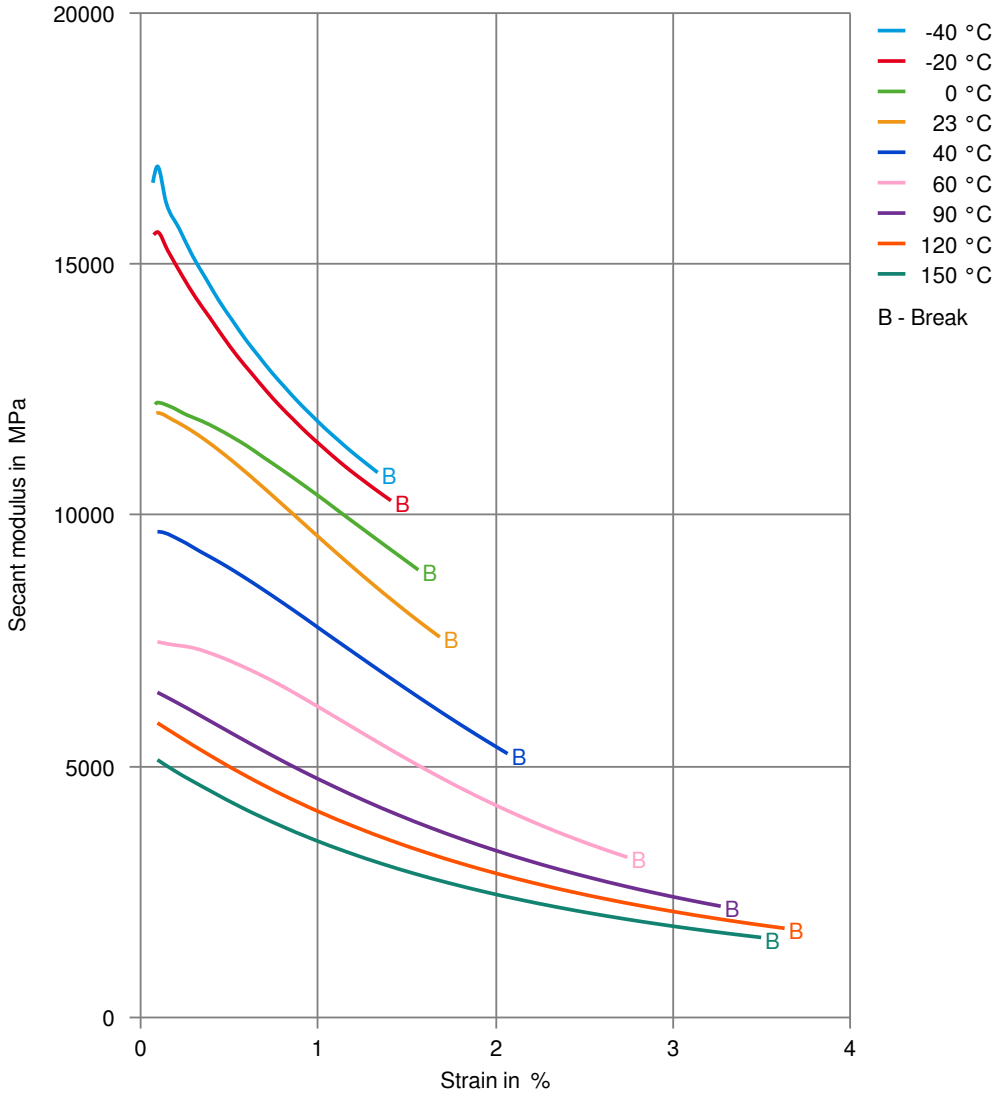
Secant modulus-strain (cond.)



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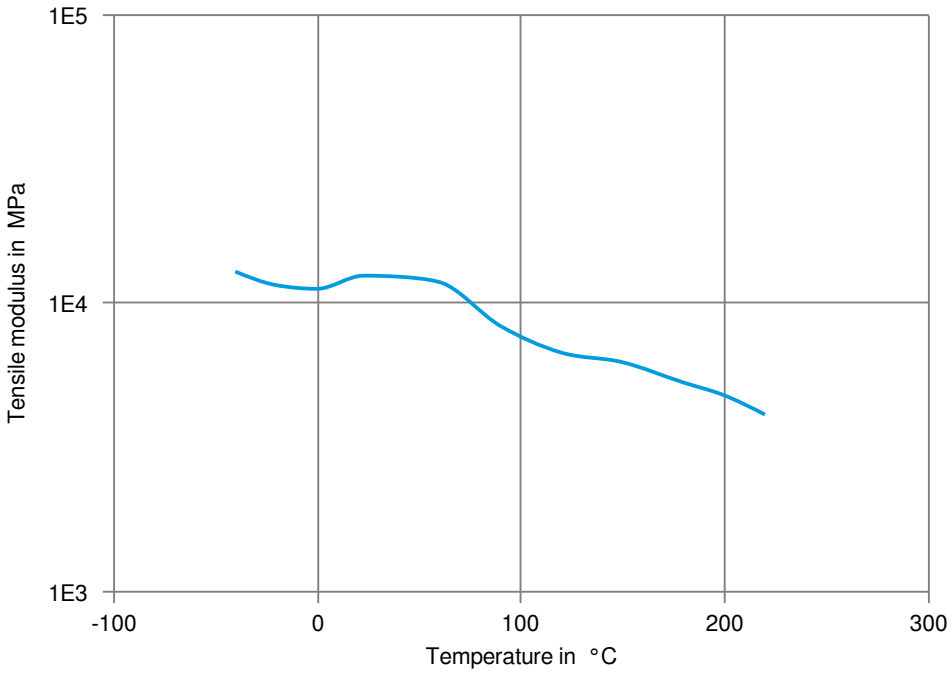
Tensile modulus-temperature (dry)



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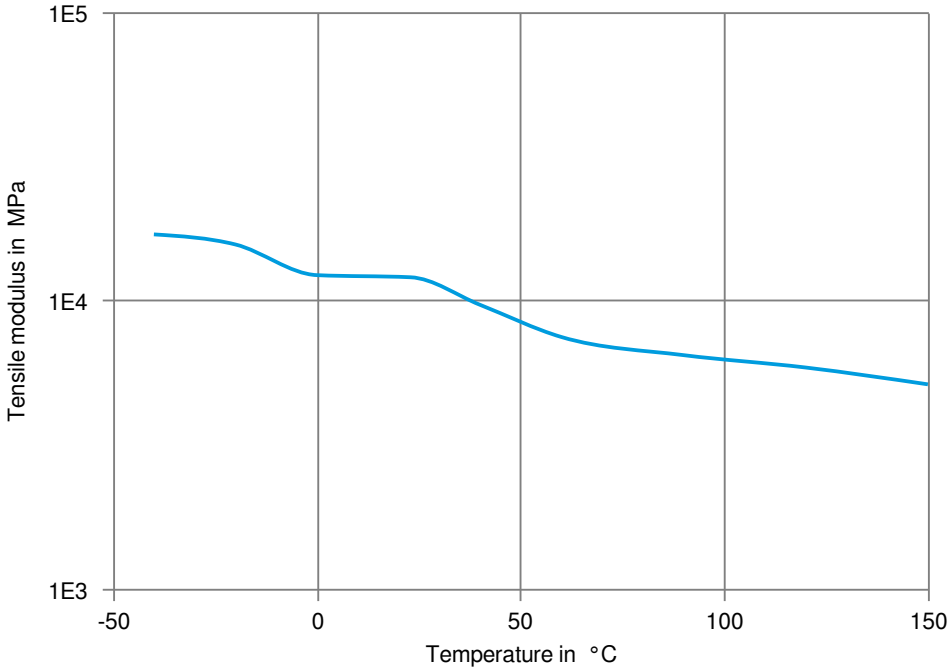
Tensile modulus-temperature (cond.)



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