Zytel® HTNFR51G35L BK337

HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTNFR51G35L BK337 is a 35% Glass Reinforced, Flame Retardant, PPA, High Performance Polyamide

Product information

Resin Identification	PA6T/XT-GF35FR(17)	ISO 1043
Part Marking Code	>PA6T/XT-GF35FR(17)<	ISO 11469
Part Marking Code	>PPA-GF35FR<	SAE J1344
ISO designation	ISO 16396-PA6T/XT,GF35 FR,M1CF1GR,S10-140	

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	0.1/-	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.5/-	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile Modulus	14000/14500	MPa	ISO 527-1/-2
Stress at break	174/162	MPa	ISO 527-1/-2
Strain at break	1.6/1.3	%	ISO 527-1/-2
Flexural Modulus	12000/12500	MPa	ISO 178
Flexural Strength	255/235	MPa	ISO 178
Charpy impact strength, 23°C	35/30	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	25/25	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	12/-	kJ/m²	ISO 179/1eA
Poisson's ratio	0.33/0.33	-	

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	300/*	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	262/*	°C	ISO 75-1/-2
RTI, electrical, 0.75mm	150	°C	UL 746B
RTI, electrical, 1.5mm	150	°C	UL 746B
RTI, electrical, 3mm	150	°C	UL 746B
RTI, impact, 0.75mm	120	°C	UL 746B
RTI, impact, 1.5mm	125	°C	UL 746B
RTI, impact, 3mm	130	°C	UL 746B
RTI, strength, 0.75mm	130	°C	UL 746B
RTI, strength, 1.5mm	140/*	°C	UL 746B
RTI, strength, 3mm	150	°C	UL 746B

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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	0.81/*	mm	IEC 60695-11-10
UL recognition	yes/*	-	UL 94
Oxygen index	41/*	%	ISO 4589-1/-2
Glow Wire Flammability Index, 0.75mm	960/-	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 0.75mm	930/-	°C	IEC 60695-2-13
Glow Wire Temperature, No Flame, 0.75mm	875/-	°C	IEC 60335-1
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	mm/min	ISO 3795 (FMVSS 302)
Railway classification	R23/-	-	EN 45545-2
Railway classification rating	HL1/-	-	EN 45545-2

Electrical properties

	dry/cond.		
Relative permittivity, 100Hz	3.9/-	-	IEC 62631-2-1
Relative permittivity, 1MHz	3.6/-	-	IEC 62631-2-1
Dissipation factor, 100Hz	80/-	E-4	IEC 62631-2-1
Dissipation factor, 1MHz	150/-	E-4	IEC 62631-2-1
Volume resistivity	>1E13/-	Ohm.m	IEC 62631-3-1
Surface resistivity	*/>1E15	Ohm	IEC 62631-3-2
Electric Strength, Short Time, 2mm	20/-	kV/mm	IEC 60243-1

Other properties

	dry/cond.		
Density	1670/-	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	325	°C
Min. melt temperature	320	°C
Max. melt temperature	330	°C
Mold Temperature Optimum	150	°C
Min. mould temperature	140	°C
Max. mould temperature	180	°C

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Characteristics

Additives	Flame retardant

Additional Information

Injection molding	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. When lower mold temperatures are used, the initial warpage and shrinkage may be lower, but the surface appearance and chemical resistance may be reduced, and the dimensional change may be greater when parts are subsequently heated.

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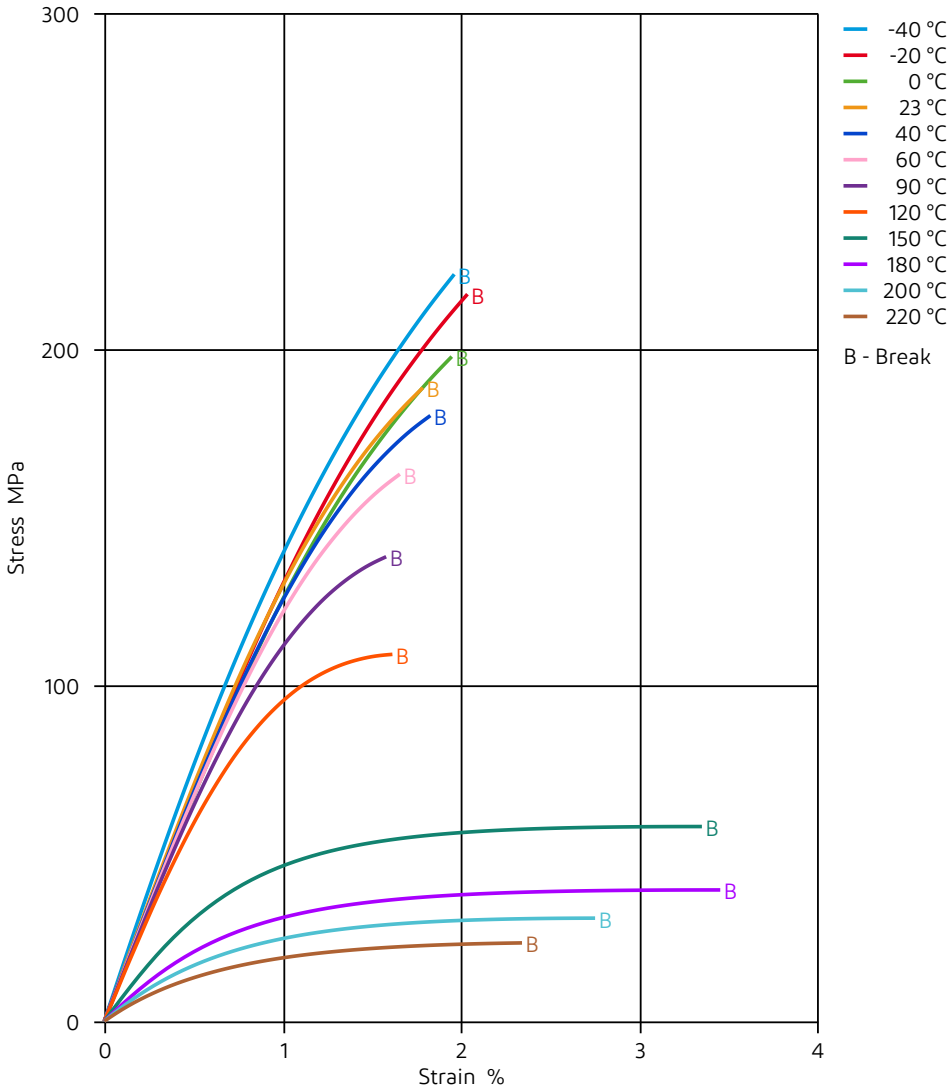
Stress-strain (dry)



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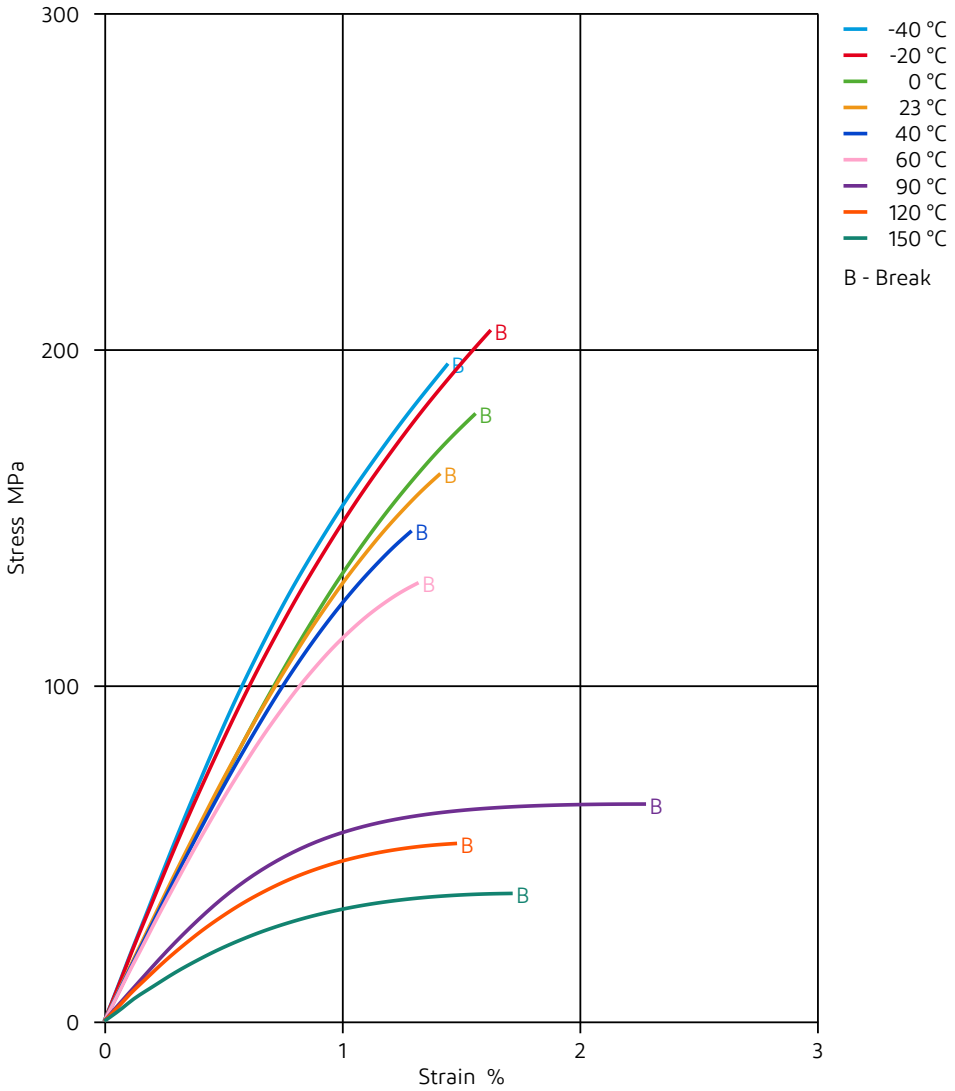
Stress-strain (cond.)



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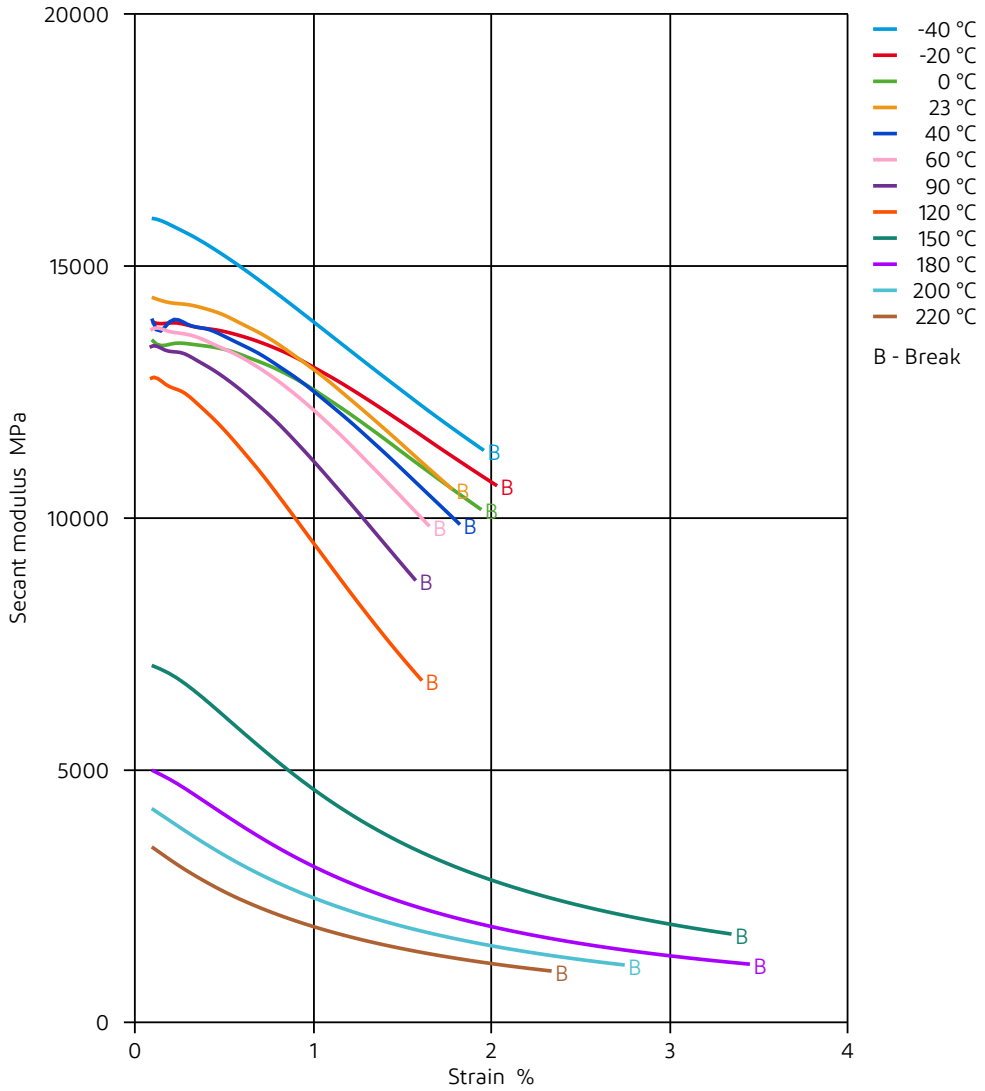
Secant modulus-strain (dry)



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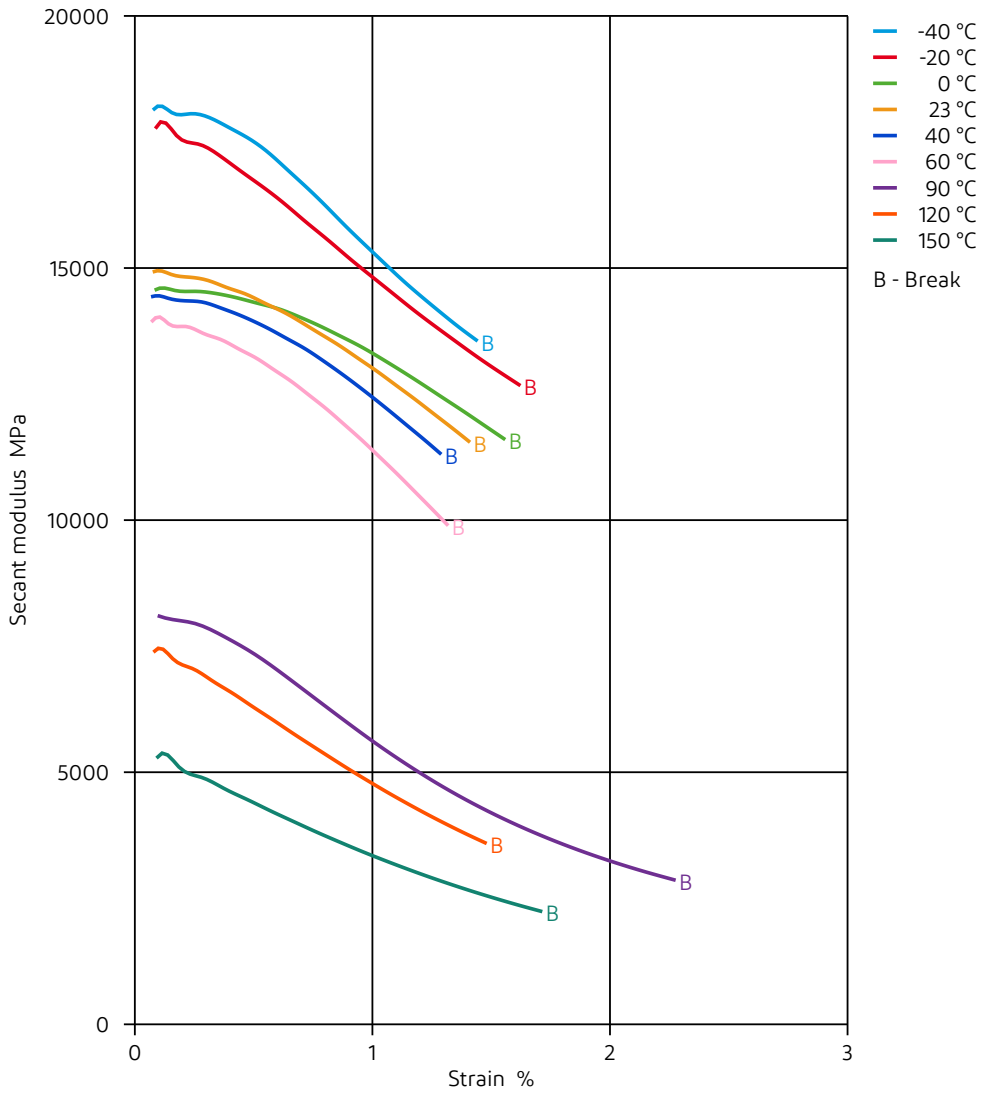
Secant modulus-strain (cond.)



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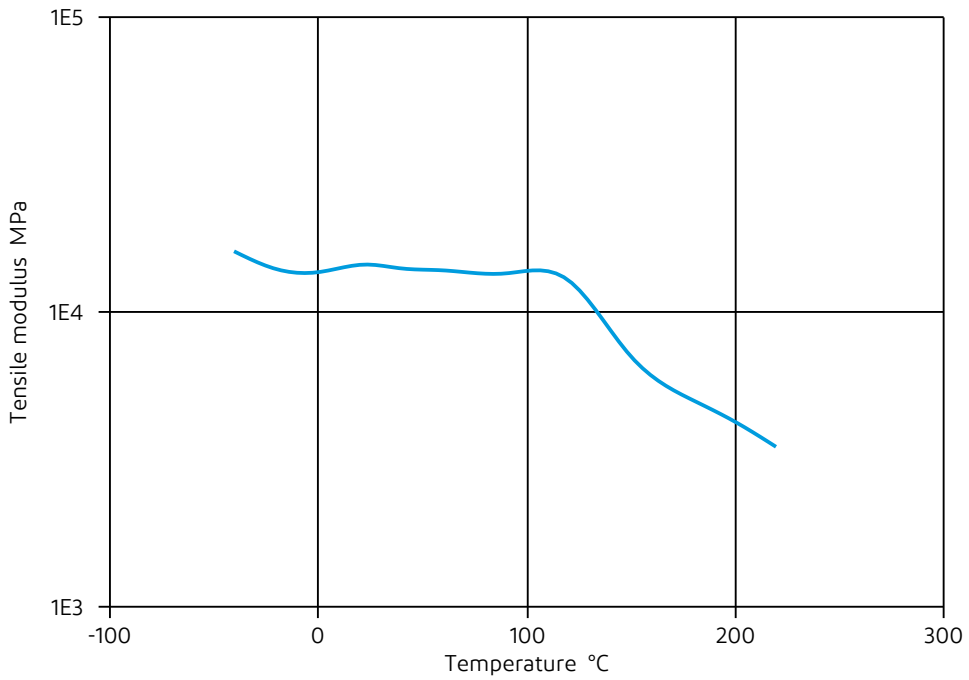
Tensile modulus-temperature (dry)



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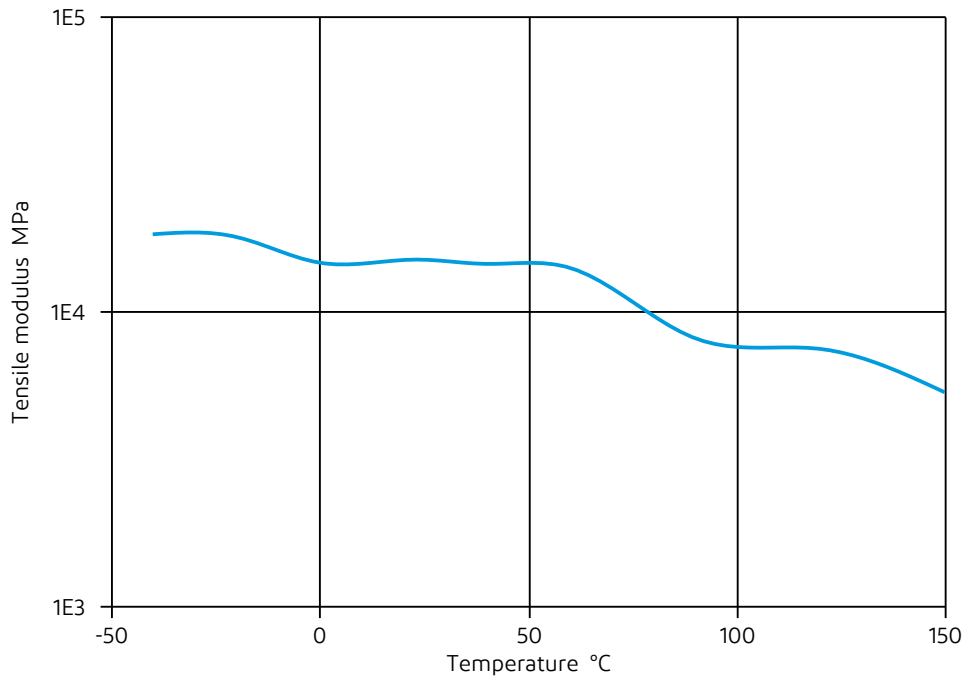
Tensile modulus-temperature (cond.)



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