

Zytel® HTNFR42G30NH BK337

HIGH PERFORMANCE POLYAMIDE RESIN

Zytel® HTNFR42G30NH BK337 is a 30% glass reinforced, flame retardant high performance polyamide resin developed for improved reflow soldering performance in connector applications. It is also a PPA resin and it uses a non-halogenated flame retardant.

Product information

Resin Identification	PA*-GF30FR(40	ISO 1043
Part Marking Code)	
Part Marking Code	>PA*-GF30 FR(40)<	ISO 11469
Part Marking Code	>PPA-GF30FR<	SAE J1344
ISO designation	ISO 16396-PA,GF30 FR(40),M1CF1GR,S10-110	
Biobased carbon content	≥20 ^[C] %	ISO 16620-2
[C]: Calculated		

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	0.4/-	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.9/-	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	11700/-	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	130/110	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.9/1.4	%	ISO 527-1/-2
Flexural modulus	11000/11000	MPa	ISO 178
Flexural strength	210/-	MPa	ISO 178
Charpy impact strength, 23°C	35/-	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	35/-	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	7/-	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	6/-	kJ/m ²	ISO 179/1eA
Poisson's ratio	0.33/-		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	311/*	°C	ISO 11357-1/-3
Melting temperature, first heat	314/*	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	80/50	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	276/*	°C	ISO 75-1/-2
Ball pressure test	270/-	°C	IEC 60695-10-2
Coeff. of linear therm. expansion, parallel, -40-23°C	17/*	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	21/*	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	20/*	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	43/*	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	55/*	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	84/*	E-6/K	ISO 11359-1/-2
RTI, electrical, 0.4mm	130	°C	UL 746B
RTI, electrical, 1.5mm	130	°C	UL 746B

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RTI, electrical, 3.0mm	130	°C	UL 746B
RTI, impact, 0.4mm	115	°C	UL 746B
RTI, impact, 1.5mm	115	°C	UL 746B
RTI, impact, 3.0mm	120	°C	UL 746B
RTI, strength, 0.4mm	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 thickness h	V-0/*	class	IEC 60695-11-10
Thickness tested	0.4/*	mm	IEC 60695-11-10
UL recognition	yes/*		UL 94
Glow Wire Flammability Index, 0.4mm	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, 0.4mm	750/-	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 1.5mm	800/-	°C	IEC 60695-2-13
Glow Wire Ignition Temperature, 3.0mm	825/-	°C	IEC 60695-2-13
Railway classification	R23/-		EN 45545-2
Railway classification rating	HL1/-		EN 45545-2

Electrical properties

	dry/cond.		
Volume resistivity	>1E13/-	Ohm.m	IEC 62631-3-1
Electric strength	33/-	kV/mm	IEC 60243-1
Comparative tracking index	600/-		IEC 60112
Comparative tracking index, 3.0mm	0/-	PLC	UL 746A
Dielectric Constant, 1 GHz	3.7/-		ASTM D 2520 B
Dielectric Constant, 23°C, 10 GHz	3.8/-		ASTM D 2520 B / IPC-TM-650
Dissipation Factor, 1 GHz	116/-	E-4	ASTM D 2520 B
Dissipation Factor, 23°C, 10 GHz	100/-	E-4	ASTM D 2520 B / IPC-TM-650

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1/*	%	Sim. to ISO 62
Water absorption, 2mm	2.7/*	%	Sim. to ISO 62
Density	1470/-	kg/m ³	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	330 °C
Min. melt temperature	325 °C
Max. melt temperature	335 °C
Mold Temperature Optimum	120 °C

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Min. mould temperature	110 °C
Max. mould temperature	130 °C
Ejection temperature	242 °C

Characteristics

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

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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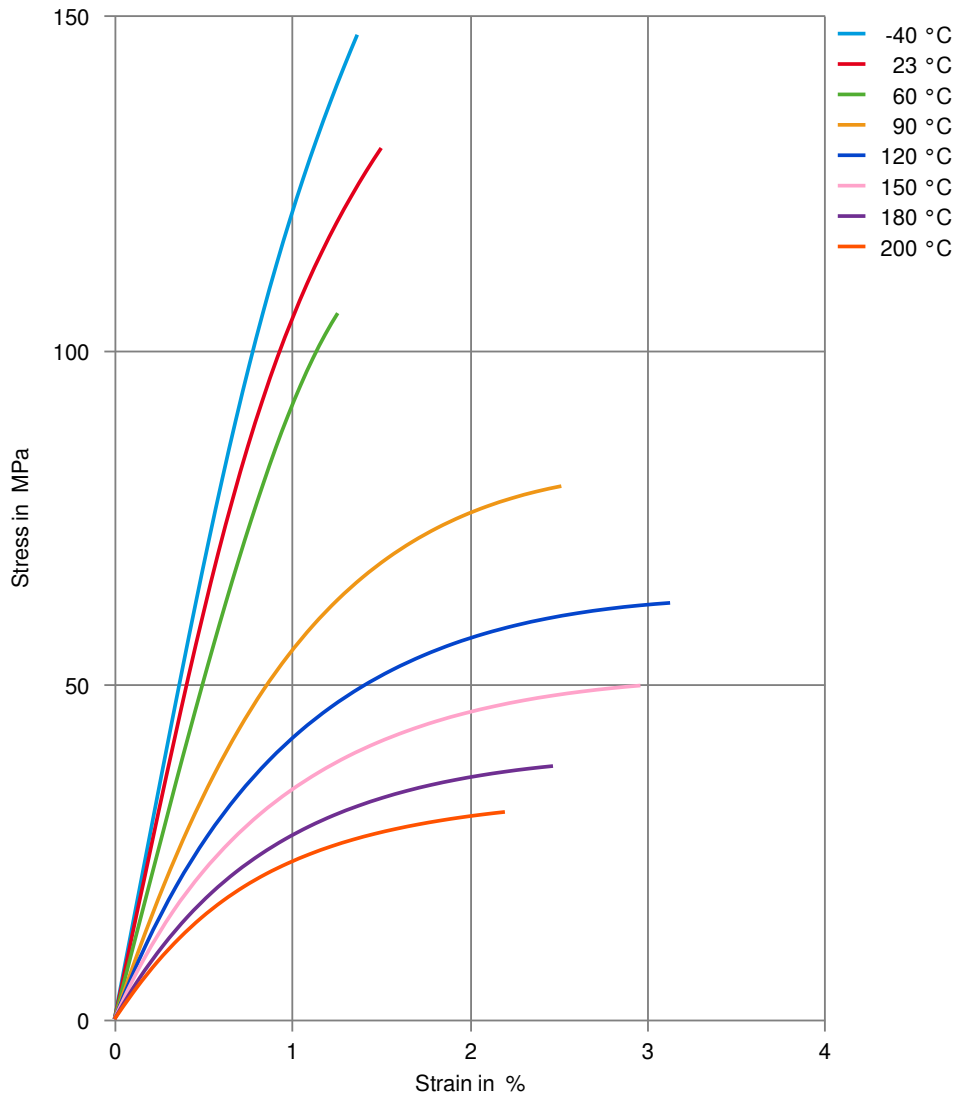
Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Renault-Nissan	AS25-c, No Spec, Special Part Approval, See Your CE Account Manager.	
Stellantis	B62 0300 / 61/U4/223E/218M/11/C2B/C4	01378_20_04254

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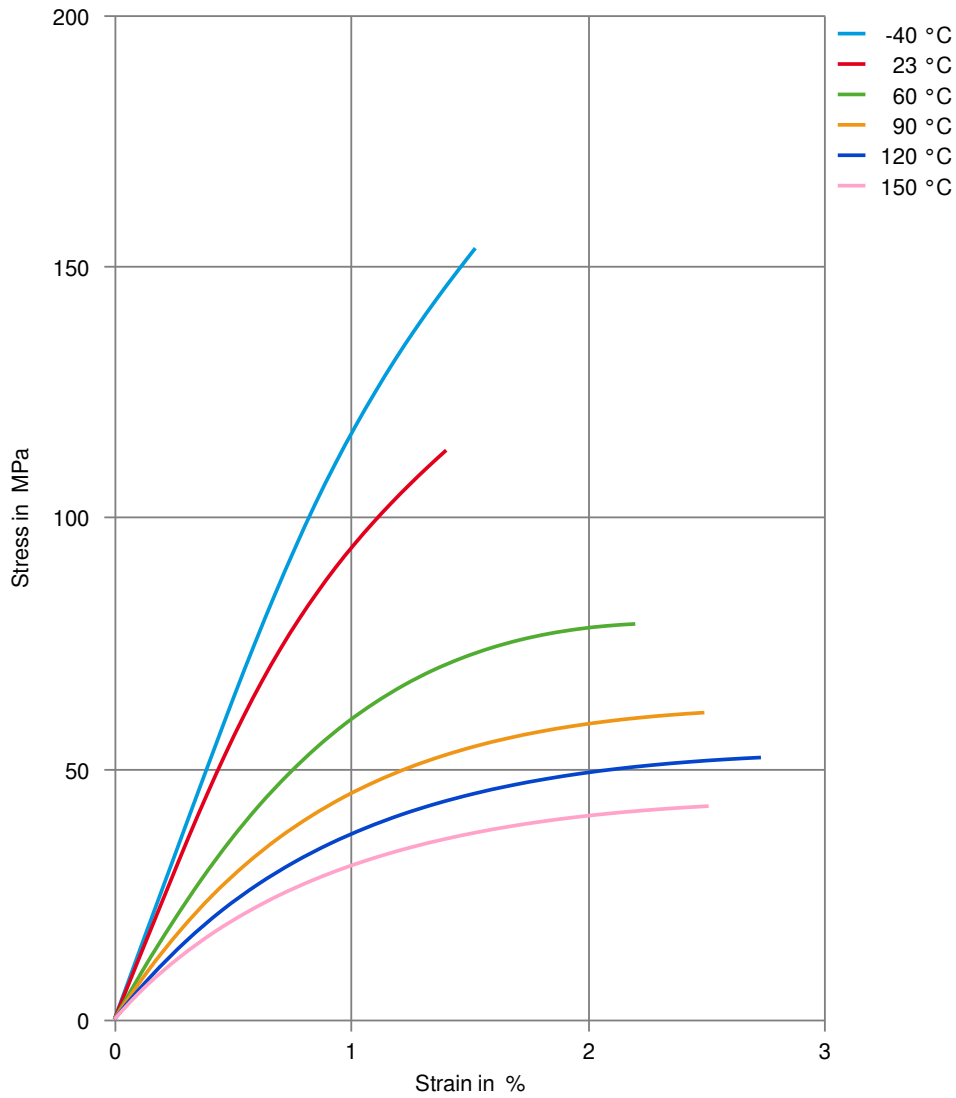
Stress-strain (dry)



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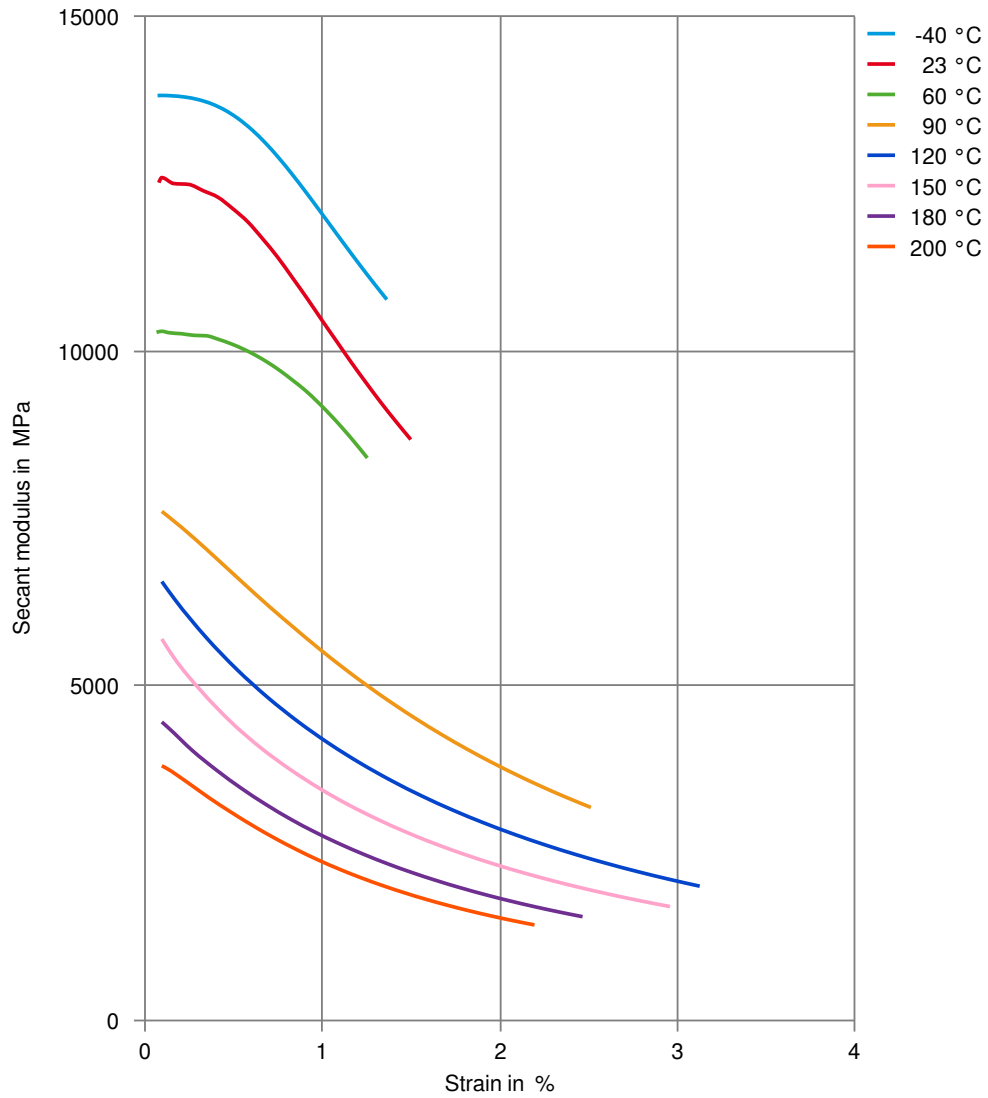
Stress-strain (cond.)



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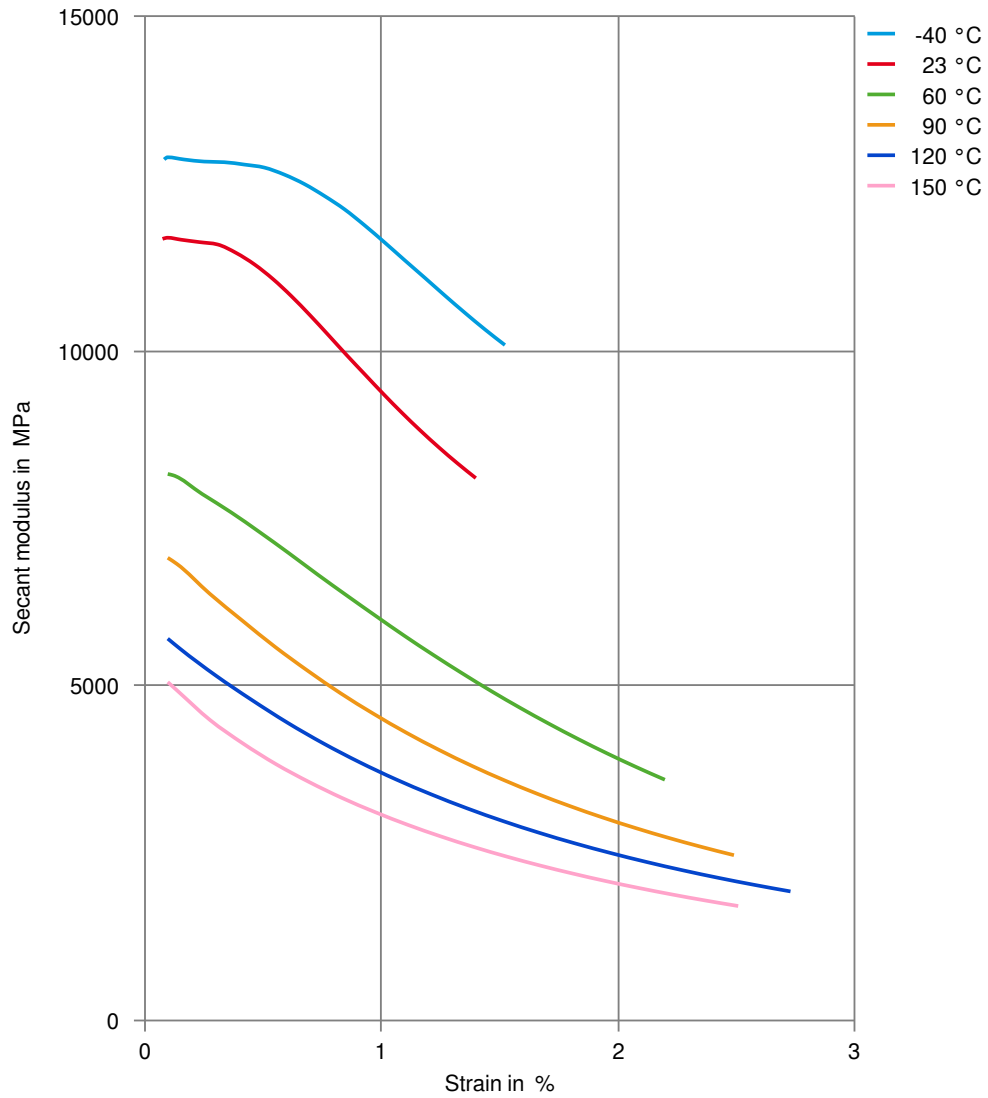
Secant modulus-strain (dry)



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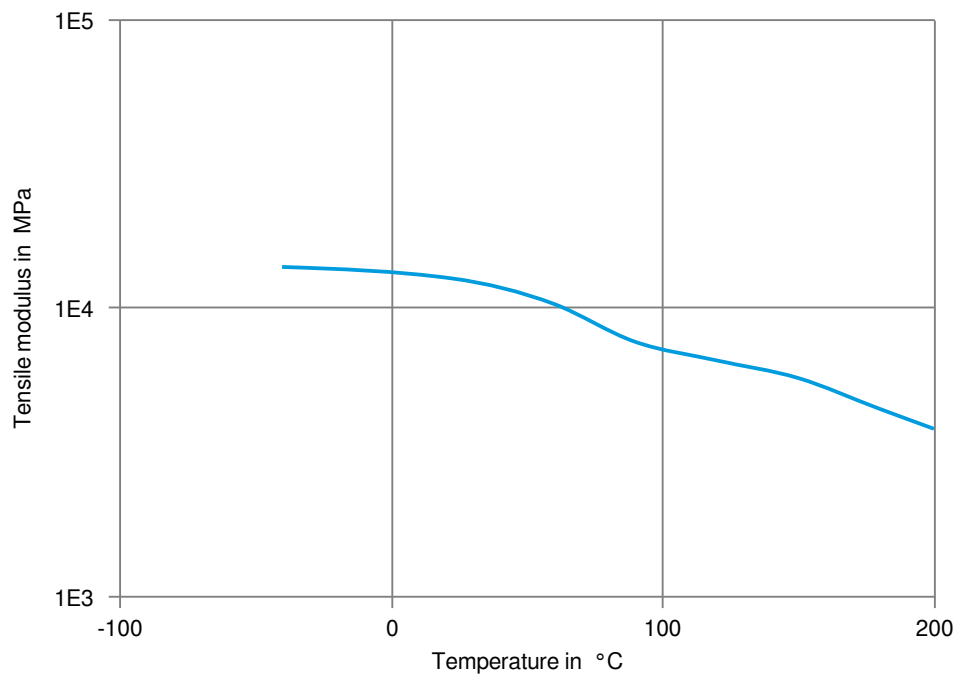
Secant modulus-strain (cond.)



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Tensile modulus-temperature (dry)



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Tensile modulus-temperature (cond.)

