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

Rheological properties

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

Typical mechanical properties

	dry/cond.		
Tensile modulus	2.03E6 / 2.1E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	25200 / 23500	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	1.6 / 1.3	%	ISO 527-1/-2
Flexural modulus	1.74E6 / 1.81E6	psi	ISO 178
Flexural strength	37000 / 34100	psi	ISO 178
Charpy impact strength, 23°C	16.6 / 14.3	ftlb/in²	ISO 179/1eU
Charpy impact strength, -30°C	11.9 / 11.9	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23°C	5.71 / -	ftlb/in²	ISO 179/1eA

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	572 / *	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	275 / 194	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	504 / *	°F	ISO 75-1/-2
RTI, electrical, 0.75mm	302	°F	UL 746B
RTI, electrical, 1.5mm	302	°F	UL 746B
RTI, electrical, 3.0mm	302	°F	UL 746B
RTI, impact, 0.75mm	248	°F	UL 746B
RTI, impact, 1.5mm	257	°F	UL 746B
RTI, impact, 3.0mm	266	°F	UL 746B
RTI, strength, 0.75mm	266	°F	UL 746B
RTI, strength, 1.5mm	284 / *	°F	UL 746B
RTI, strength, 3.0mm	302	°F	UL 746B

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	V-0 / *	class	IEC 60695-11-10
Thickness tested	0.0591 / *	in	IEC 60695-11-10
UL recognition	yes / *		UL 94
Burning Behav. at thickness h	V-0 / *	class	IEC 60695-11-10
Thickness tested	0.0319 / *	in	IEC 60695-11-10
UL recognition	yes / *		UL 94
Oxygen index	41 / *	%	ISO 4589-1/-2
Glow Wire Flammability Index, 0.75mm	1760 / -	°F	IEC 60695-2-12

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Glow Wire Ignition Temperature, 0.75mm	1710 / -	°F	IEC 60695-2-13
Glow Wire Temperature, No Flame, 0.75mm	1610 / -	°F	IEC 60335-1
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	in/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	508 / -	V/mil	IEC 60243-1

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1 / *[A]	%	Sim. to ISO 62
Water absorption, 2mm	2.6 / *[A]	%	Sim. to ISO 62
Density	0.0603 / -	lb/in³	ISO 1183

[A]: Assessed

Injection

Drying Recommended	yes	
Drying Temperature	212	°F
Drying Time, Dehumidified Dryer	6 - 8	h
Processing Moisture Content	≤0.1	%
Melt Temperature Optimum	617	°F
Min. melt temperature	608	°F
Max. melt temperature	626	°F
Mold Temperature Optimum	302	°F
Min. mold temperature	284	°F
Max. mold temperature	356	°F
Hold Pressure Time (h is the max. wall thickness of the part in mm)	h^2+2	s

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Renault-Nissan	UB21c, No Spec, Special Part Approval, See Your CE Account Manager.	
Stellantis	B62 0300 / 61/U4/225E-218M/C2B/C4	01378_20_04245

Characteristics

Processing	Injection Molding
Additives	Flame retardant
Special characteristics	Flame retardant, Lead-free soldering resistant

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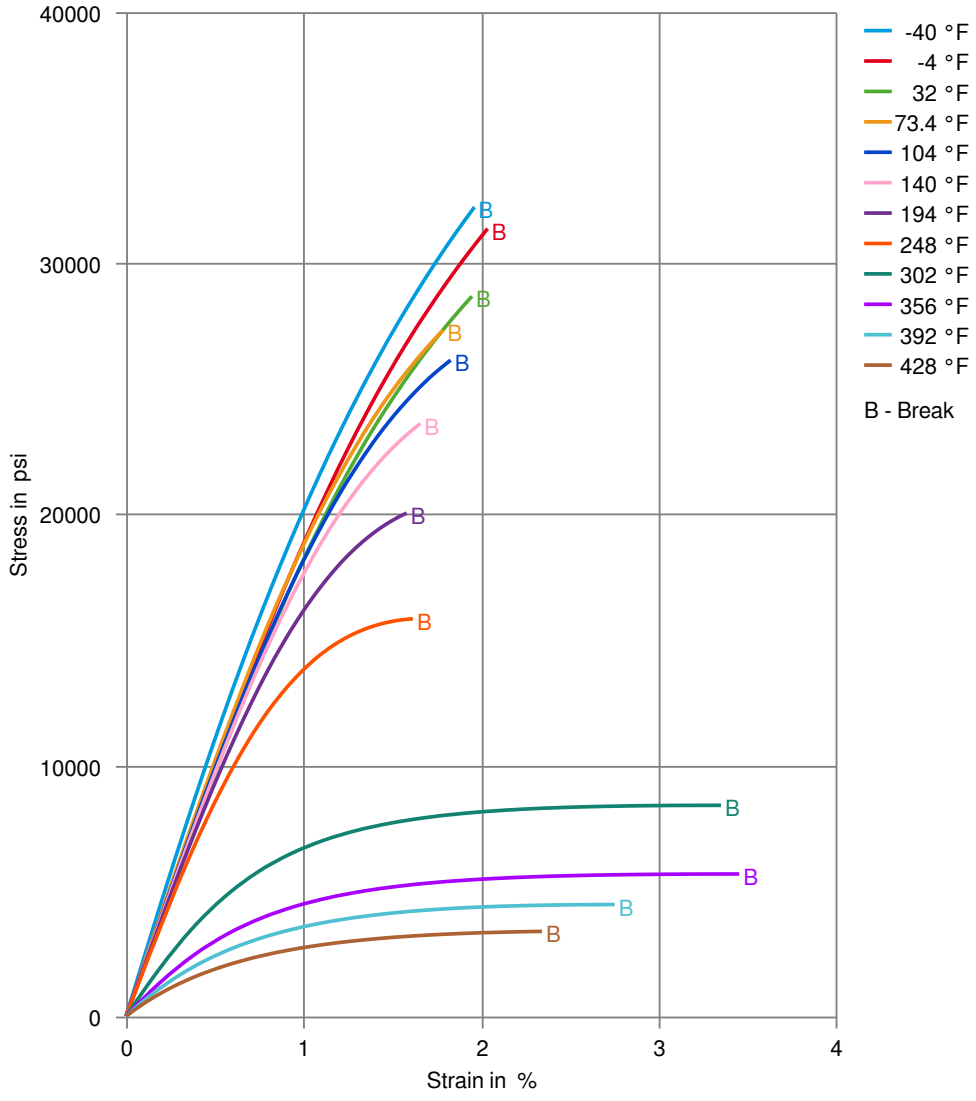
Additional information

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)

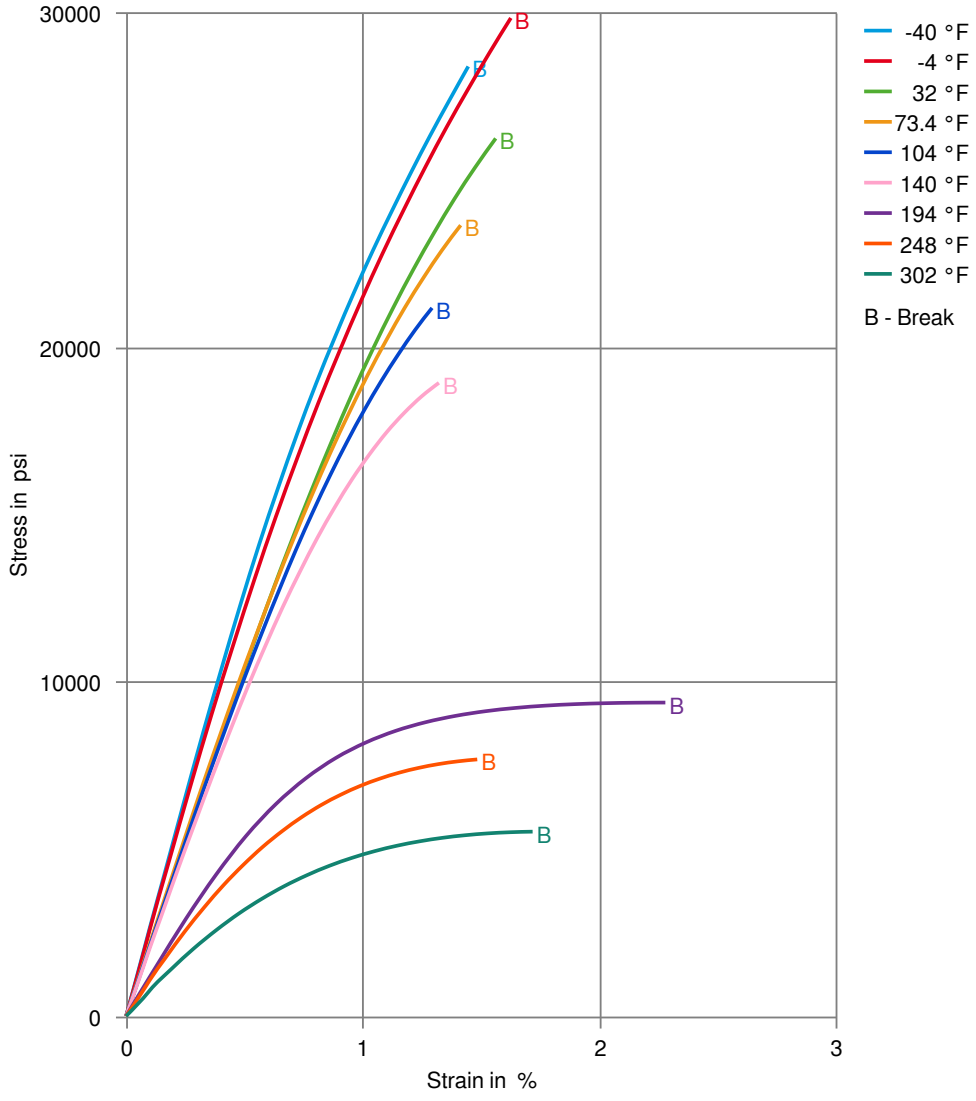


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Stress-strain (cond.)

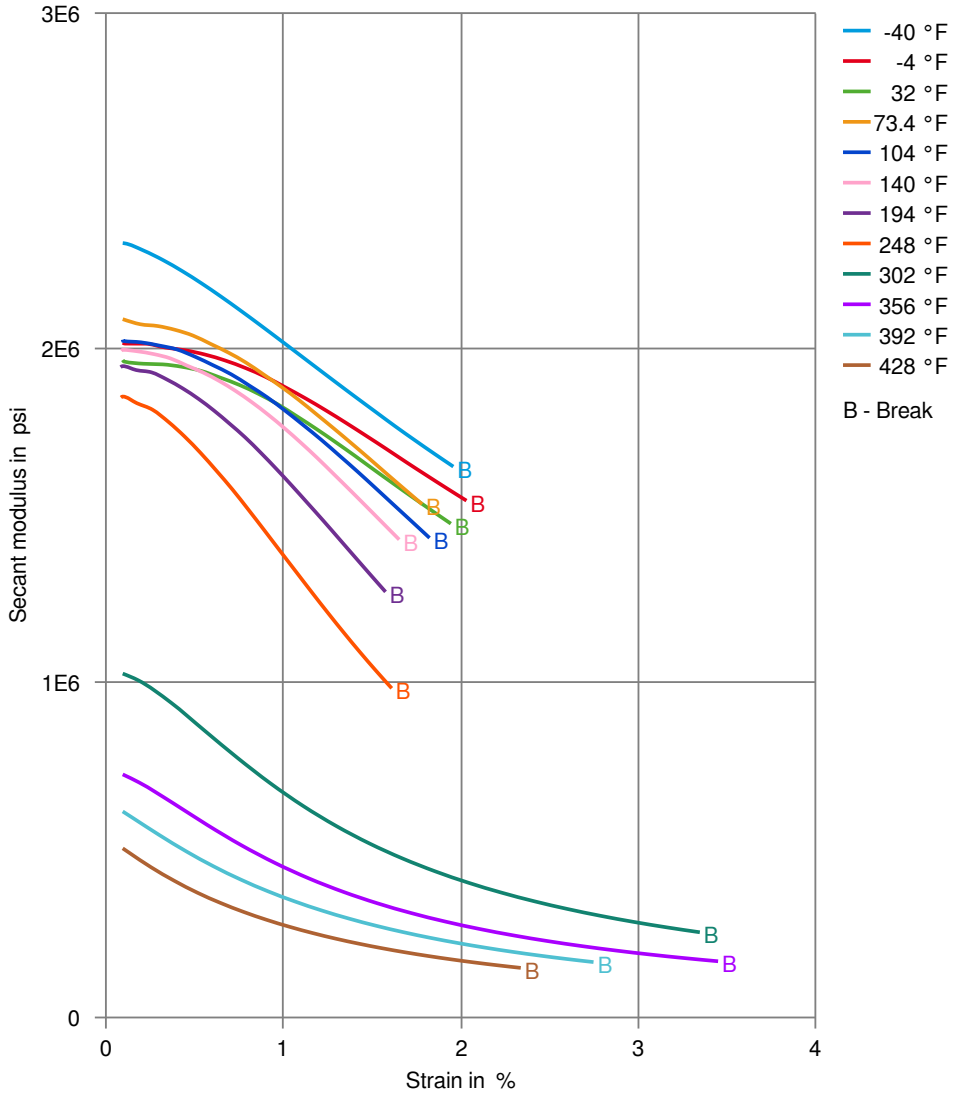


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Secant modulus-strain (dry)

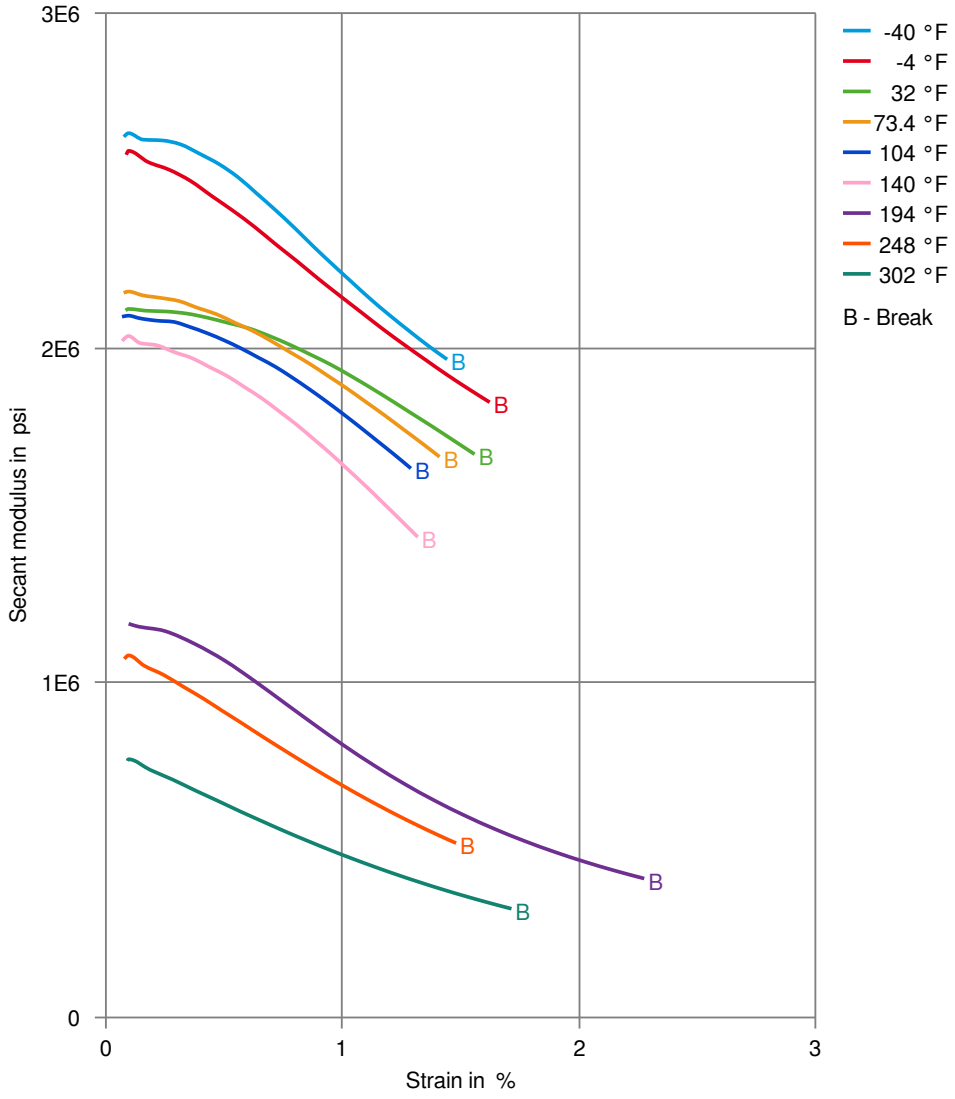


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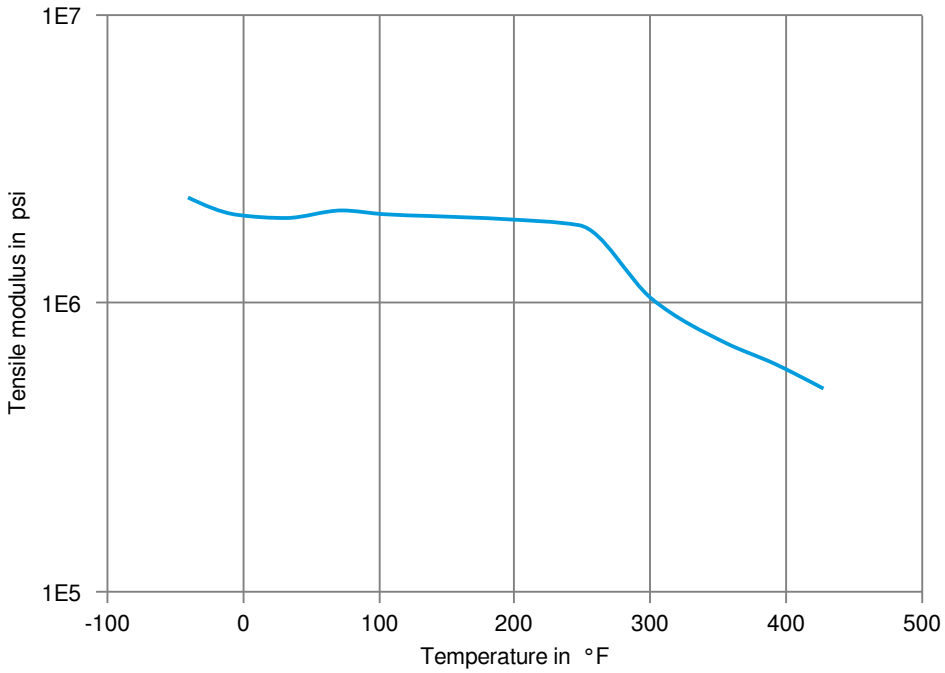
Secant modulus-strain (cond.)



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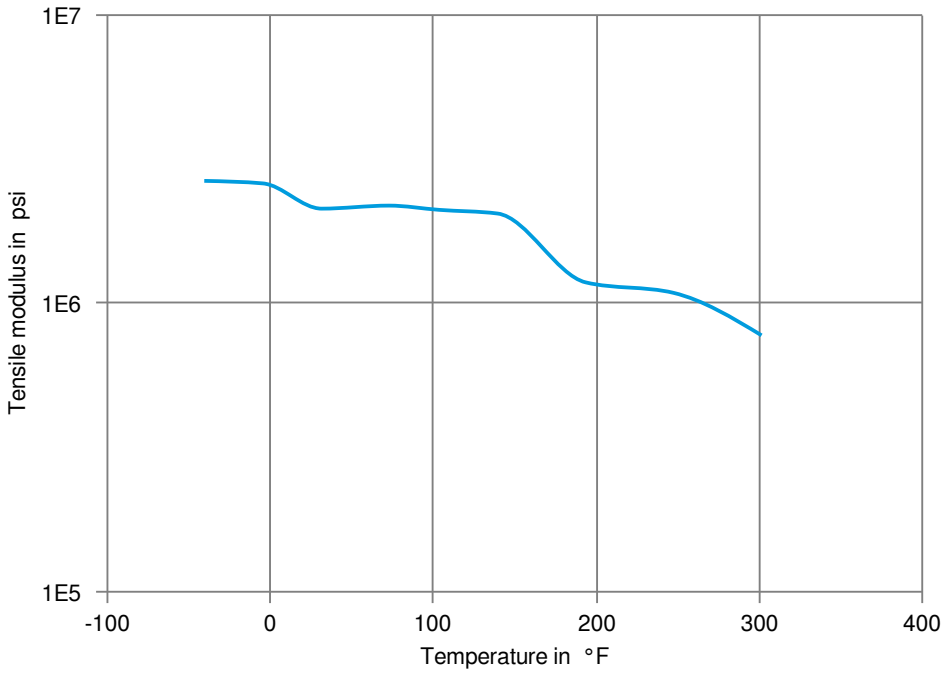
Tensile modulus-temperature (dry)



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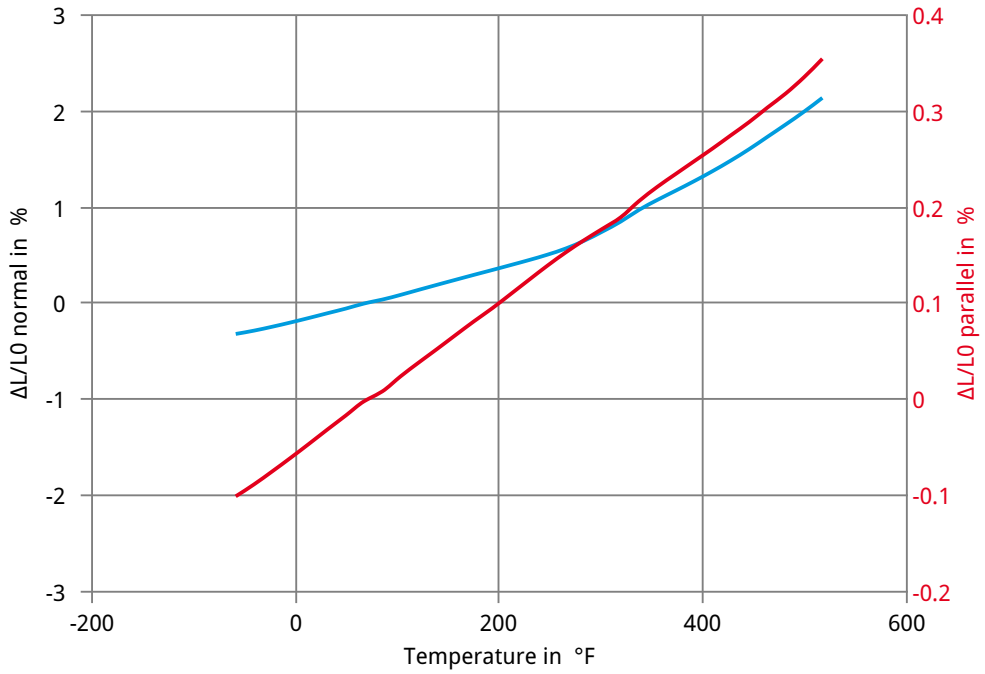
Tensile modulus-temperature (cond.)



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Thermal expansion



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