Zytel® RS78G33FHS BK083

LONG CHAIN POLYAMIDE RESIN

Zytel® RS78G33FHS BK083 is a 33% glass reinforced, heat stabilized, Hydrolysis Resistant,

biobased polyamide 610 resin.

Product information

Resin Identification	PA610-GF33		ISO 1043
Part Marking Code	>PA610-GF33<		ISO 11469
ISO designation	ISO 16396-PA610,GF33,M1CGH,S14-100		
Biobased carbon content	≥60[C]	%	ISO 16620-2
Infrared spectrum	available		
TGA curve	available		ISO 11358-1

[C]: Calculated

Rheological properties

	dry/cond.		
Melt mass-flow rate	18 / *	g/10min	ISO 1133
Melt mass-flow rate, Temperature	482 / *	°F	
Melt mass-flow rate, Load	22 / *	lb	
Molding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.6 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	1.48E6 / 1.19E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	27400 / 20200	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	3.1 / 4.3	%	ISO 527-1/-2
Flexural modulus	1.32E6 / 1.09E6	psi	ISO 178
Flexural strength	41200 / 32600	psi	ISO 178
Charpy impact strength, 23°C	42.8 / 39.5	ftlb/in²	ISO 179/1eU
Charpy impact strength, -30°C	35.2 / 34.3	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23°C	6.18 / 6.18	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -30°C	5.23 / 5.23	ftlb/in²	ISO 179/1eA

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	437 / *	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	140 / 122	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	408 / *	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.11 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel, -40-23°C	0.117 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel, 55-160°C	0.0778 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.539 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal, -40-23°C	0.439 / *	E-4/°F	ISO 11359-1/-2

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Coefficient of linear thermal expansion (CLTE), normal, 55-160 °C	0.789 / *	E-4/°F	ISO 11359-1/-2
Thermal conductivity, flow	0.41	W/(m K)	ISO 22007-2
Specific heat capacity of melt	2130	J/(kg K)	ISO 22007-4
Specific heat capacity solid	1120	J/(kg K)	ISO 22007-4

Flammability

FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80	in/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Volume resistivity	4E12 / -	Ohm.m	IEC 62631-3-1
Surface resistivity	* / 4E12	Ohm	IEC 62631-3-2
Electric strength	889 / -	kV/in	IEC 60243-1
Comparative tracking index	575 / -		IEC 60112

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.1 / *	%	Sim. to ISO 62
Water absorption, 2mm	2.9 / *	%	Sim. to ISO 62
Water absorption, Immersion 24h	0.9 / *	%	Sim. to ISO 62
Density	0.0484 / -	lb/in³	ISO 1183

Injection

Drying Temperature	176	°F
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.15	%
Melt Temperature Optimum	545	°F
Min. melt temperature	518	°F
Max. melt temperature	572	°F
Mold Temperature Optimum	203	°F
Min. mold temperature	158	°F
Max. mold temperature	248	°F
Hold Pressure Time (h is the max. wall thickness of the part in mm)	h^2+2	s
Ejection temperature	376	°F

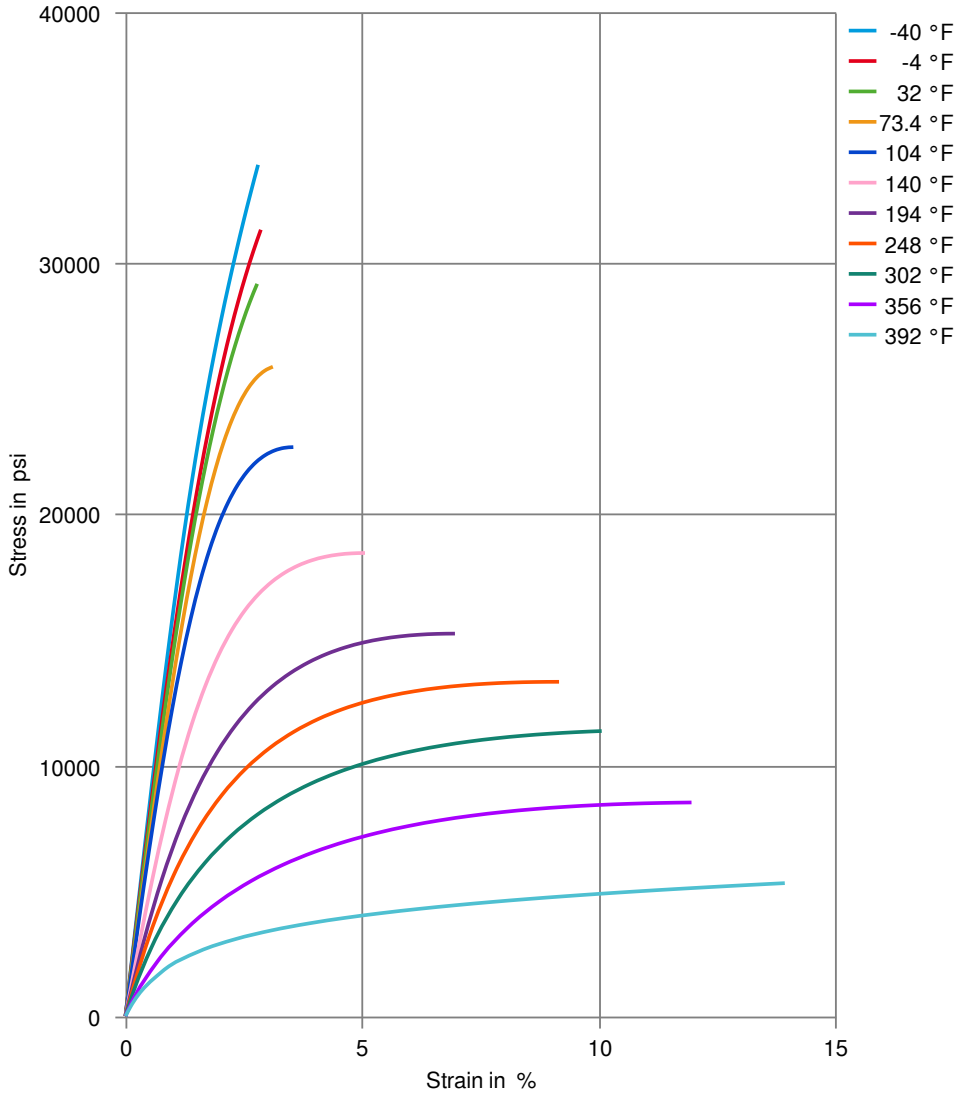
Characteristics

Processing	Injection Molding
Sustainability	Bio-Content

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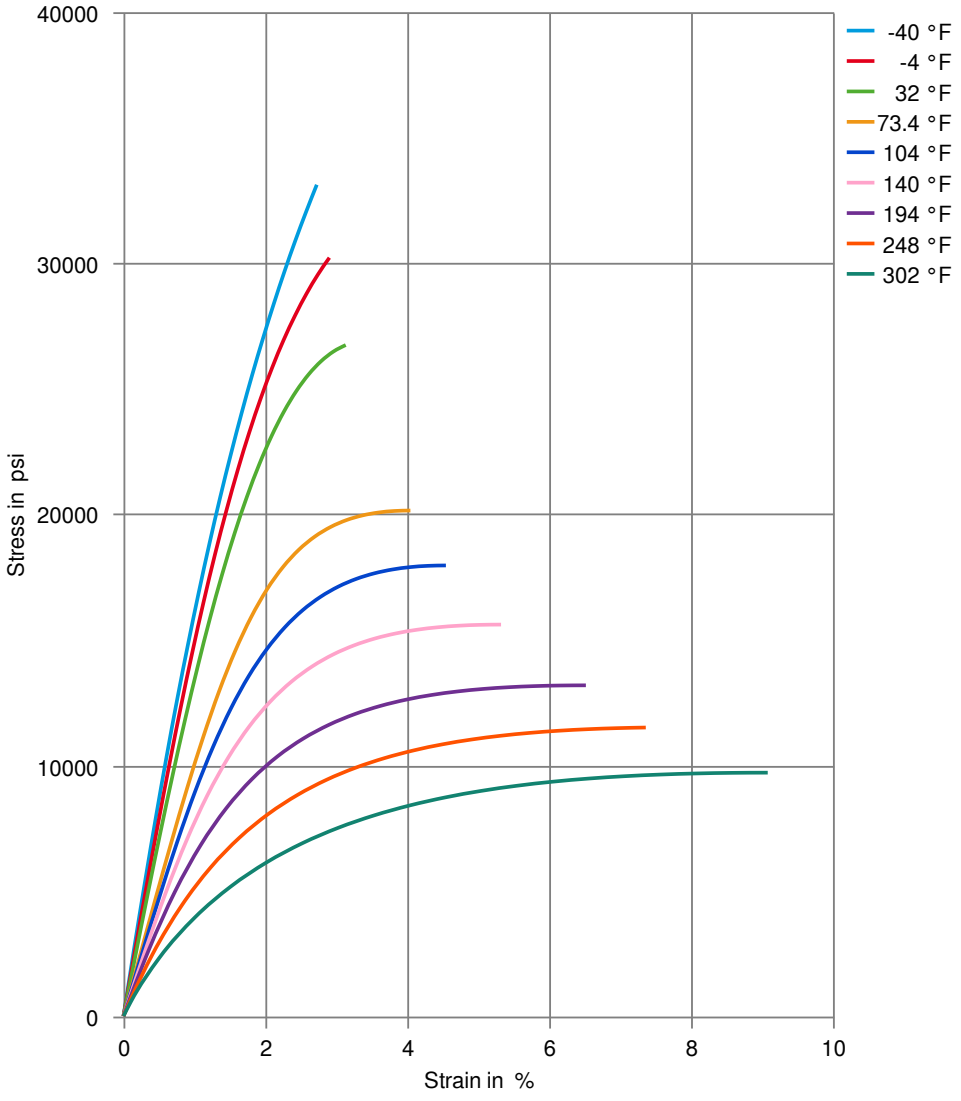
Stress-strain (dry)



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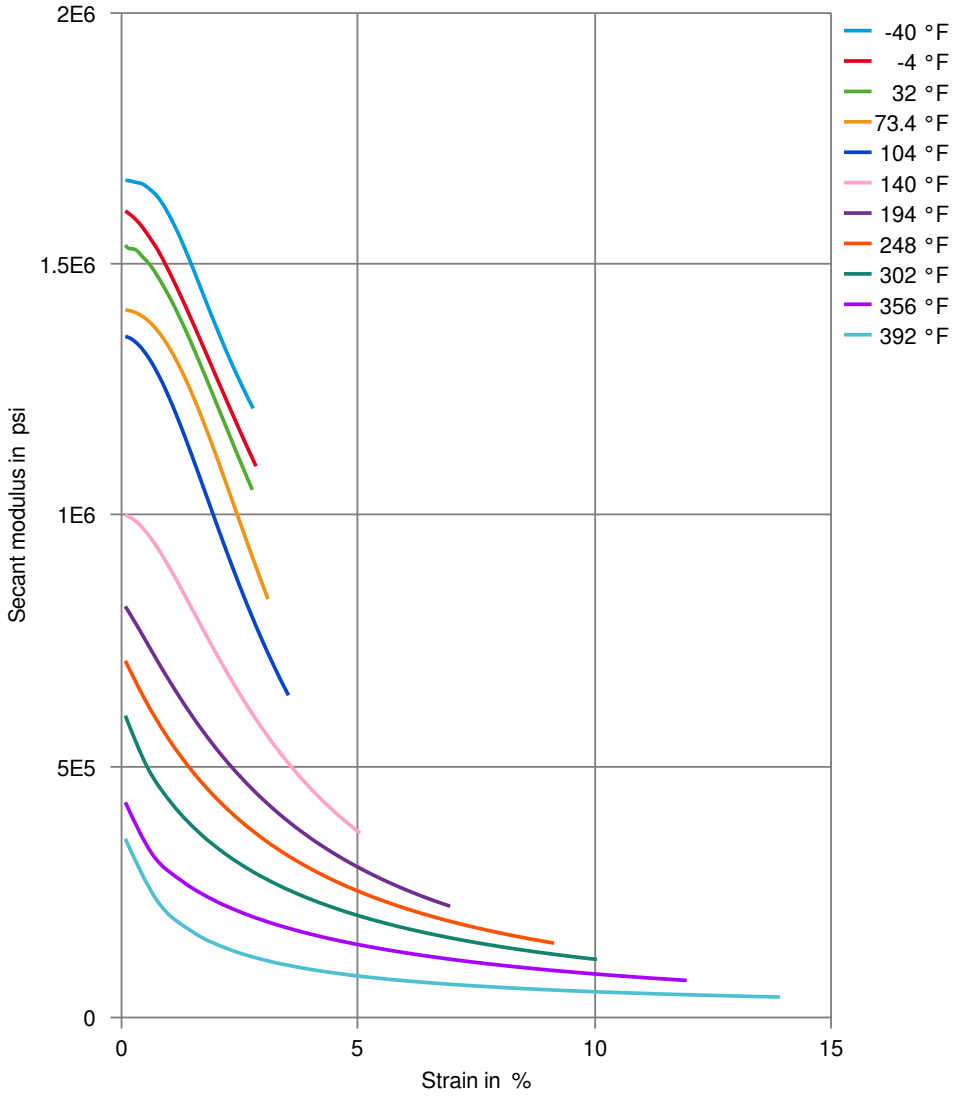
Stress-strain (cond.)



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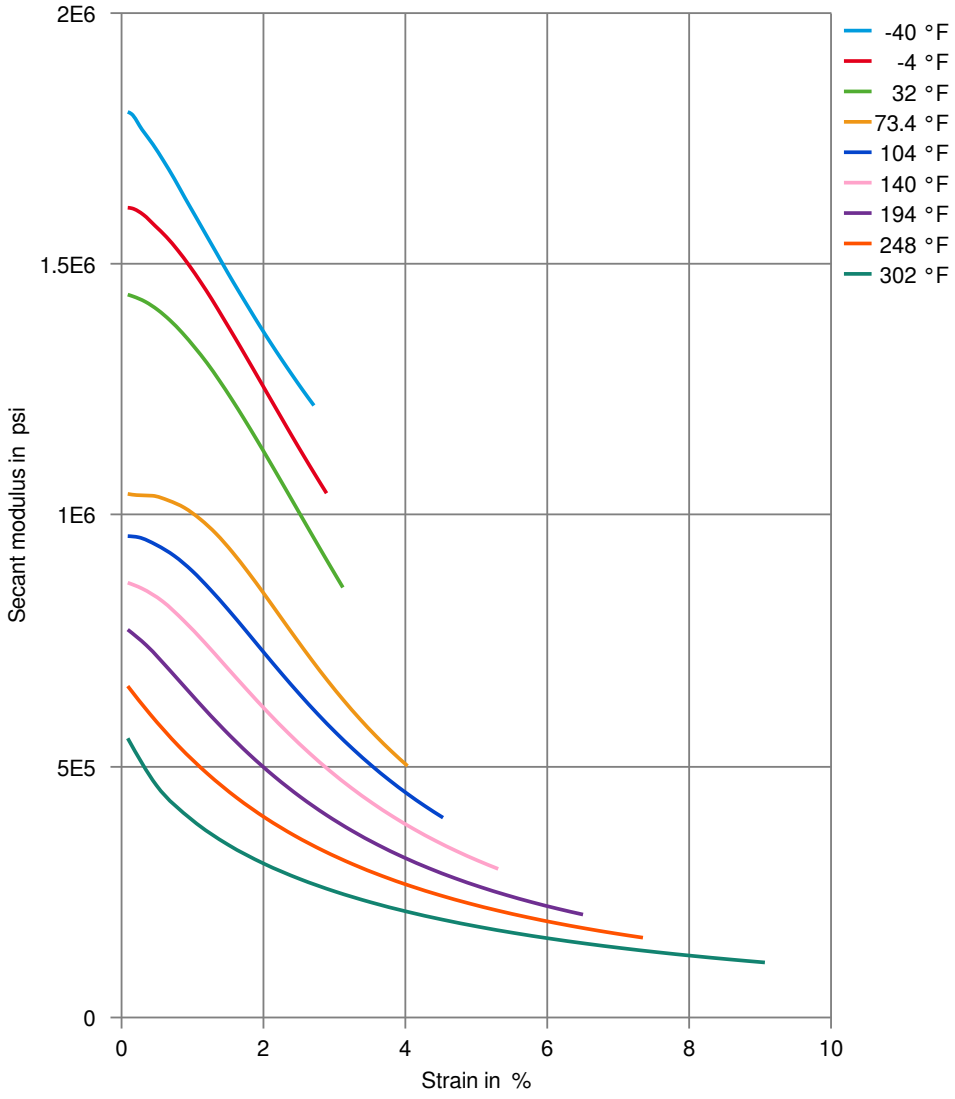
Secant modulus-strain (dry)



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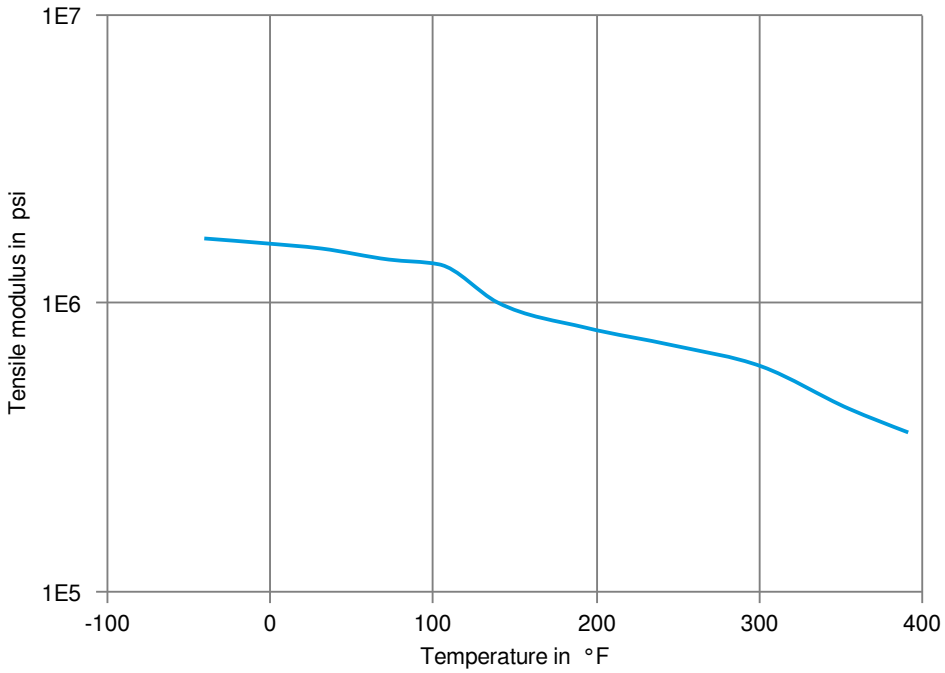
Secant modulus-strain (cond.)



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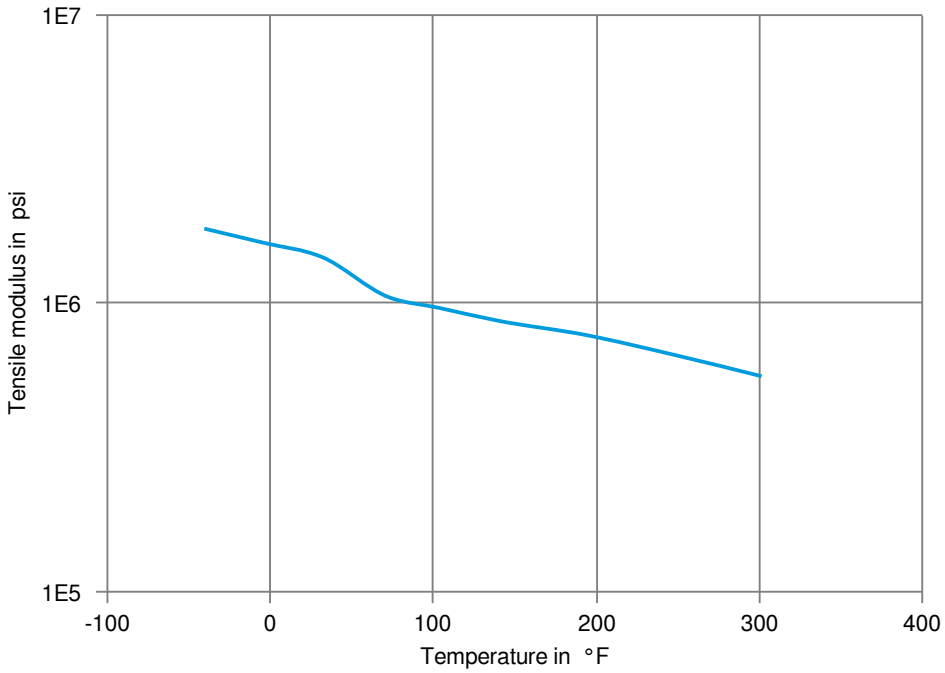
Tensile modulus-temperature (dry)



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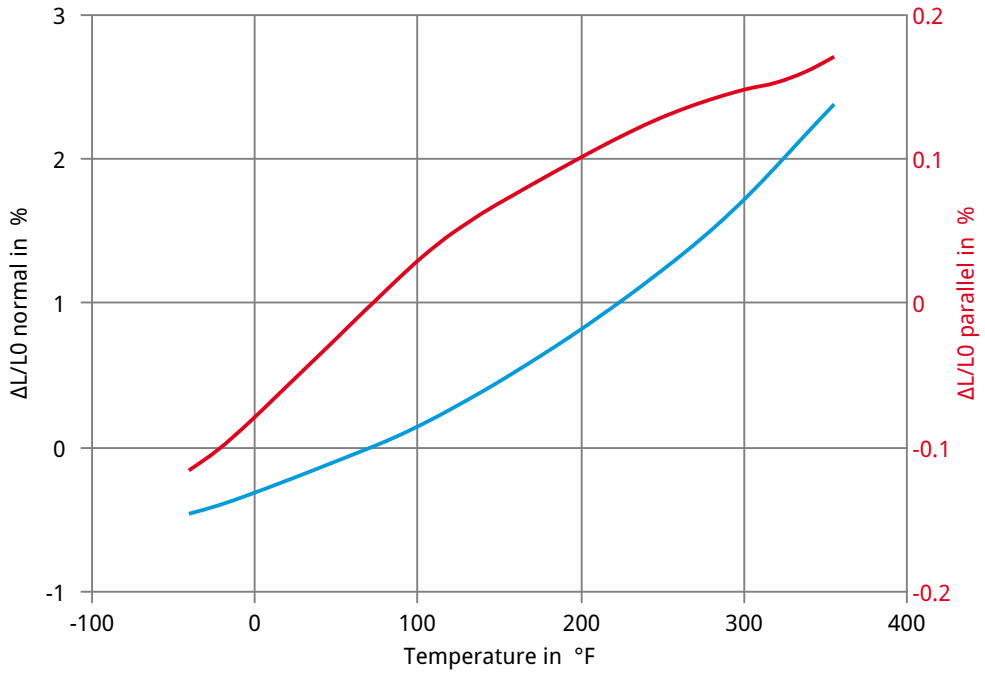
Tensile modulus-temperature (cond.)



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Thermal expansion



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Chemical Media Resistance

Other

- ✔ Ethylene Glycol (50% by mass) in water, 108°C
- ✔ Coolant Glysantin G48, 1:1 in water, 125°C

Symbols used:

✔ possibly resistant
Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

✘ not recommended - see explanation
Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

Revised: 2025-09-03 Source: Celanese Materials Database

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colorants or other additives may cause significant variations in data values. Properties of molded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.
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