Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

Common features of Zytel® nylon resin include mechanical and physical properties such as high mechanical strength, excellent balance of stiffness and toughness, good high temperature performance, good electrical and flammability properties, good abrasion and chemical resistance. In addition, Zytel® nylon resins are available in different modified and reinforced grades to create a wide range of products with tailored properties for specific processes and end-uses. Zytel® nylon resin, including most flame retardant grades, offer the ability to be coloured.

The good melt stability of Zytel® nylon resin normally enables the recycling of properly handled production waste. If recycling is not possible, we recommend, as the preferred option, incineration with energy recovery (-31kJ/g of base polymer) in appropriately equipped installations. For disposal, local regulations have to be observed.

Zytel® nylon resin typically is used in demanding applications in the automotive, furniture, domestic appliances, sporting goods and construction industry.

Zytel® XMP70G50HSLR BK314LM is a 50% glass reinforced, heat stabilized, hydrolysis resistant, laser markable PA66 resin for injection molding. It has been developed for applications requiring outstanding mechanical and fatigue performance.

Product information

Resin Identification	PA66-GF50	ISO 1043
ISO designation	ISO 16396-PA66,GF50,M1CGHO2RW,S14-190	

Rheological properties

	dry/cond.		
Molding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	1.0 / -	%	ISO 294-4, 2577
Melt viscosity , @ 1000 sec-1, 280 °C	2400[1] / *	P	ISO 11443

[1]: corrected at moisture level 0.13%

Typical mechanical properties

	dry/cond.		
Tensile modulus	2.61E6 / 1.93E6	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	37700 / 27600	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.5 / 5	%	ISO 527-1/-2
Flexural modulus	2.54E6 / 1.74E6	psi	ISO 178
Flexural strength	55100 / -	psi	ISO 178
Charpy impact strength, 23 °C	49 / 47.1	ftlb/in²	ISO 179/1eU
Charpy impact strength, -40 °C	38.1 / 38.1	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23 °C	9.04 / 9.51	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -30 °C	9.99 / -	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -40 °C	8.56 / 8.09	ftlb/in²	ISO 179/1eA

Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	502 / *	°F	ISO 11357-1/-3
Glass transition temperature, 10°C/min	160 / 66	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	491 / *	°F	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	505 / *	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.08 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel, -40-23°C	0.0833 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel, 55-160°C	0.05 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.511 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal, -40-23°C	0.361 / *	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal, 55-160°C	0.5 / *	E-4/°F	ISO 11359-1/-2

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.2 / *	%	Sim. to ISO 62
Water absorption, 2mm	4 / *	%	Sim. to ISO 62
Density	0.057 / -	lb/in³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	176	°F
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	572	°F
Min. melt temperature	554	°F
Max. melt temperature	590	°F
Max. screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	212	°F
Min. mold temperature	158	°F
Max. mold temperature	248	°F
Hold pressure range	7250 - 14500	psi
Hold pressure time	0.0762	s/mil
Hold Pressure Time (h is the max. wall thickness of the part in mm)	h^2+2	s
Ejection temperature	410	°F

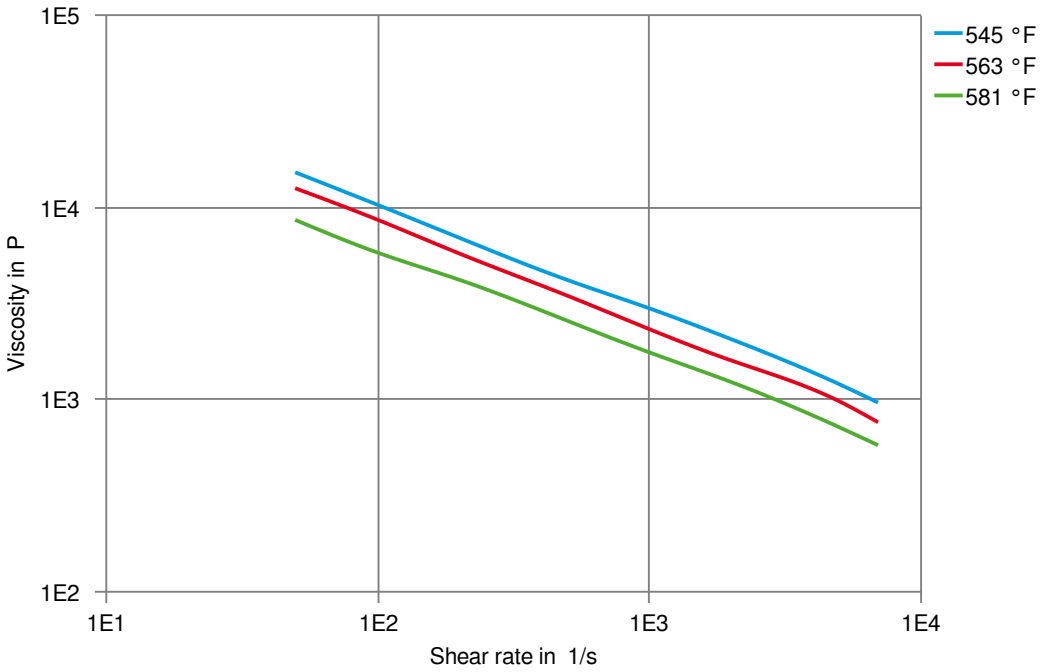
Characteristics

Processing	Injection Molding
Special characteristics	Heat stabilized or stable to heat, Laser Markable

Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

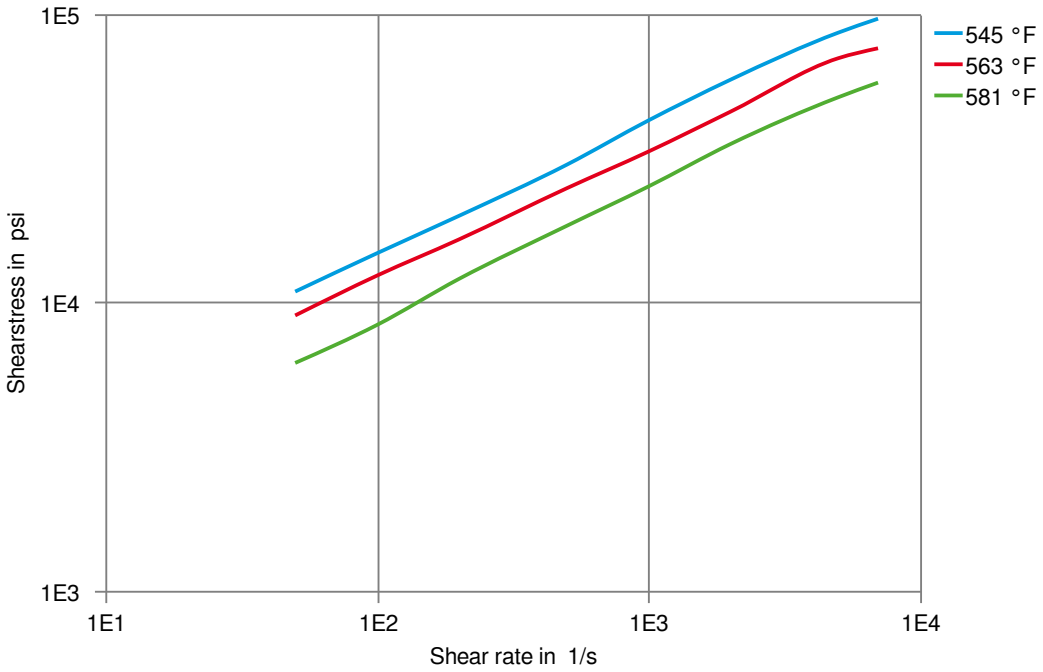
Viscosity-shear rate



Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

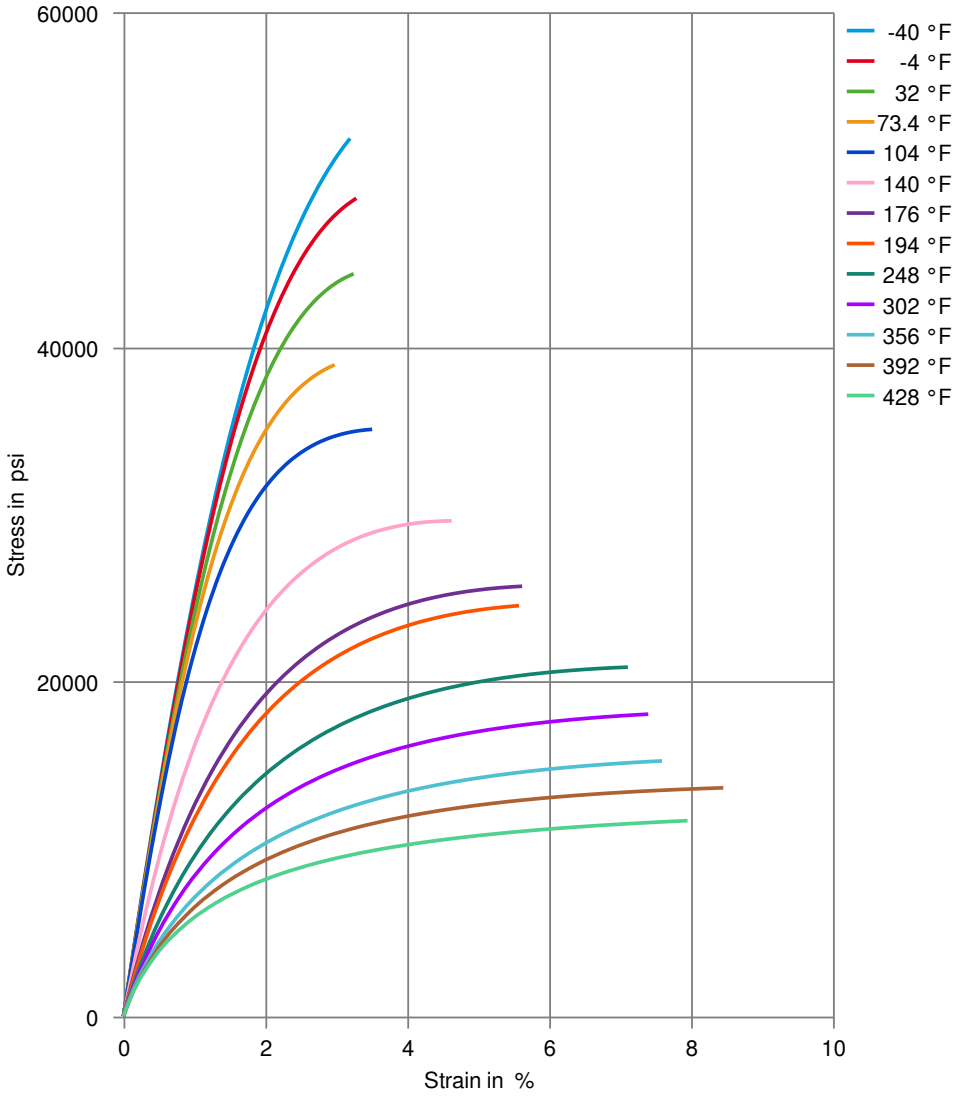
Shearstress-shear rate



Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

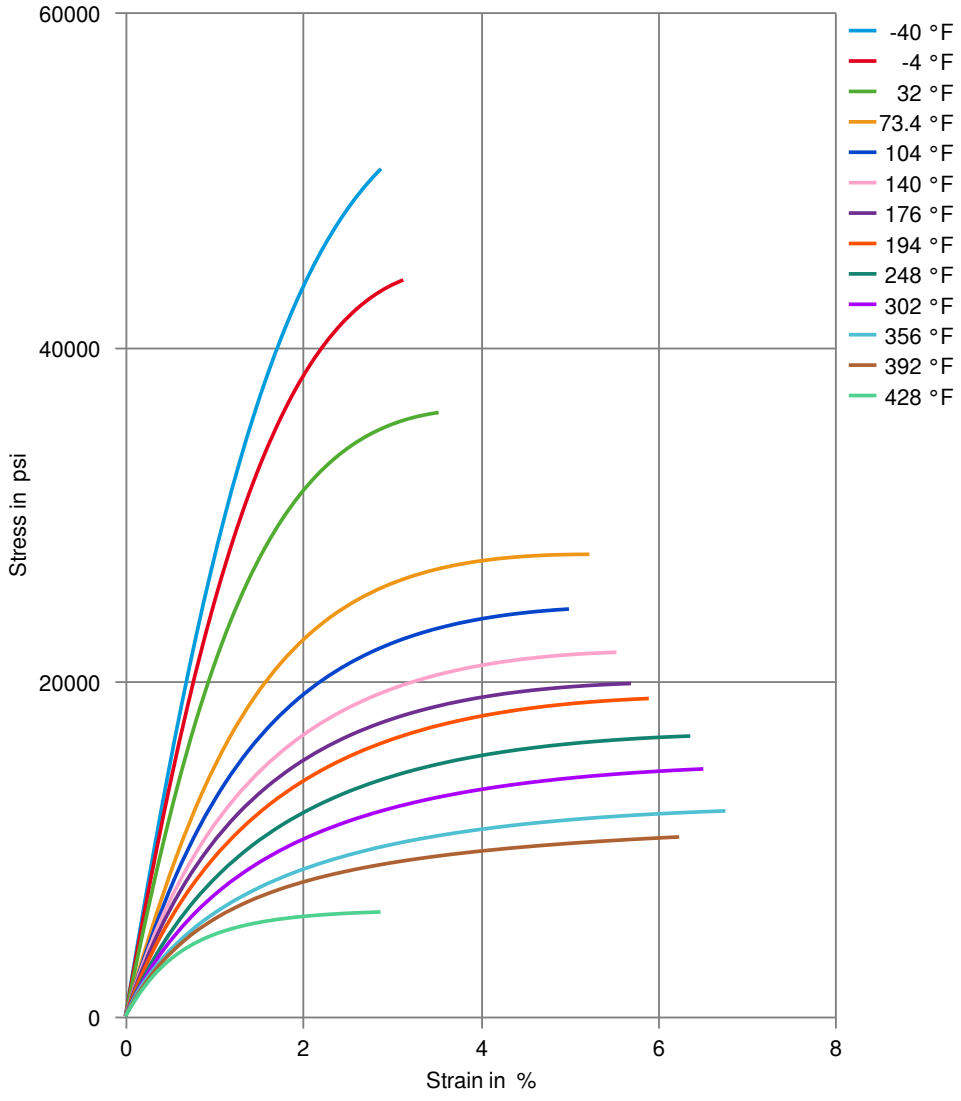
Stress-strain (dry)



Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

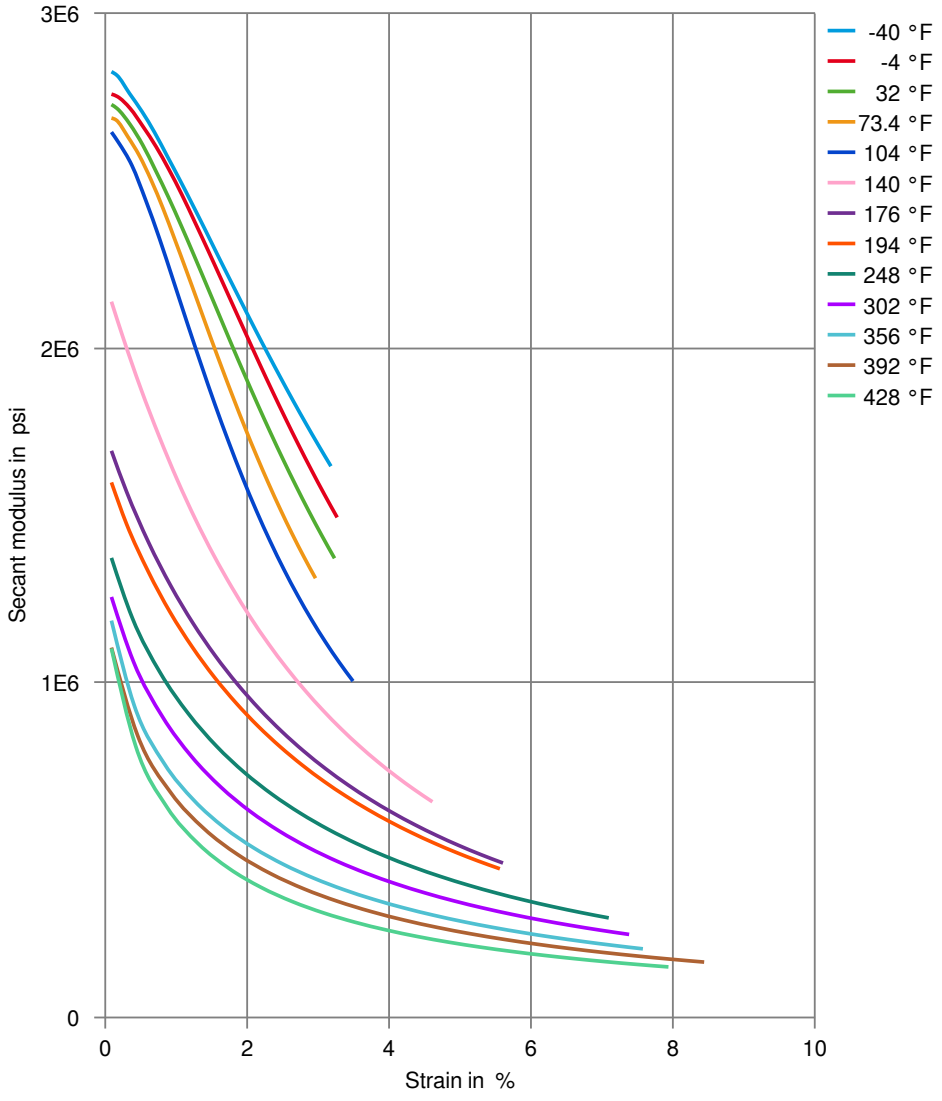
Stress-strain (cond.)



Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

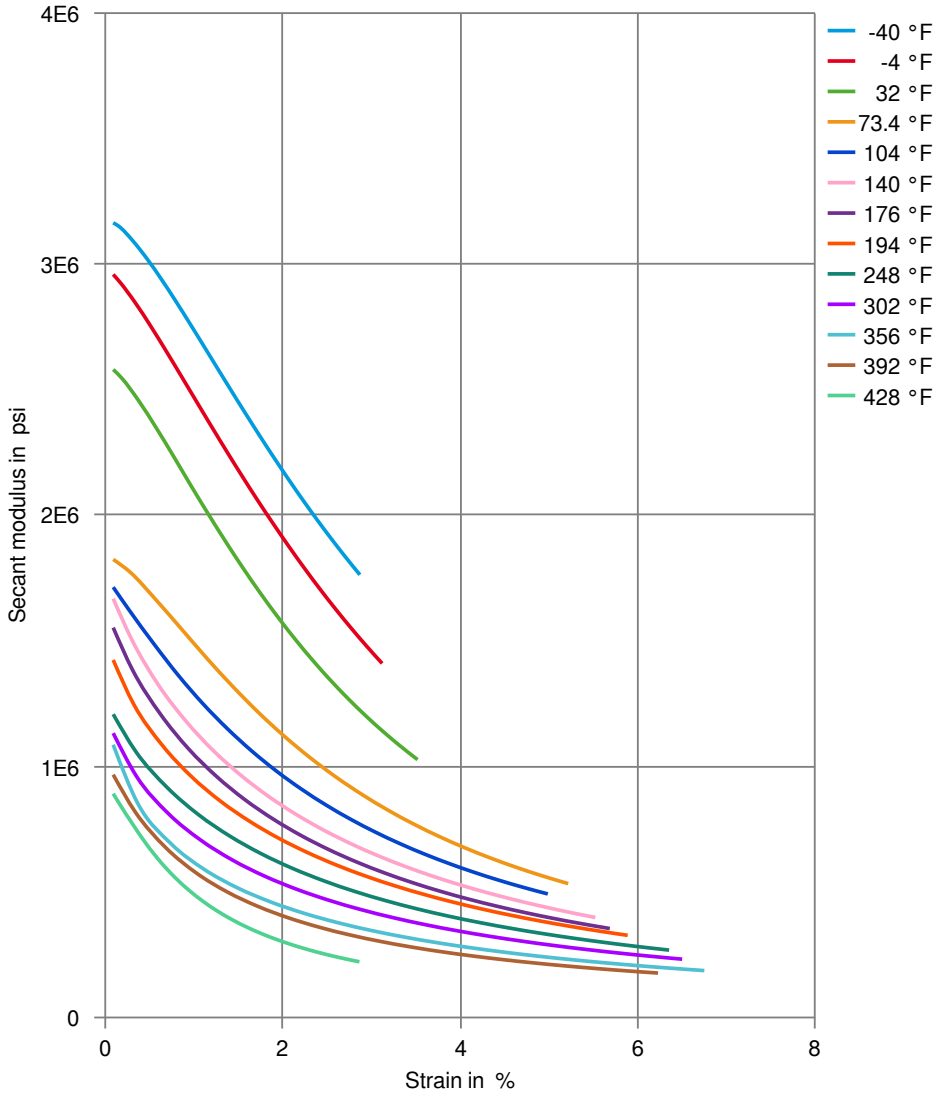
Secant modulus-strain (dry)



Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

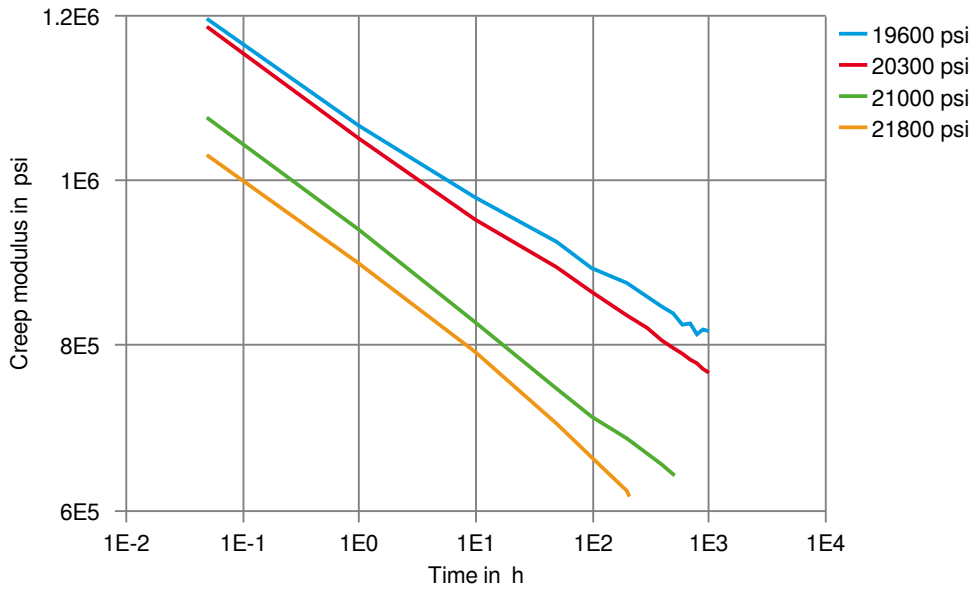
Secant modulus-strain (cond.)



Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

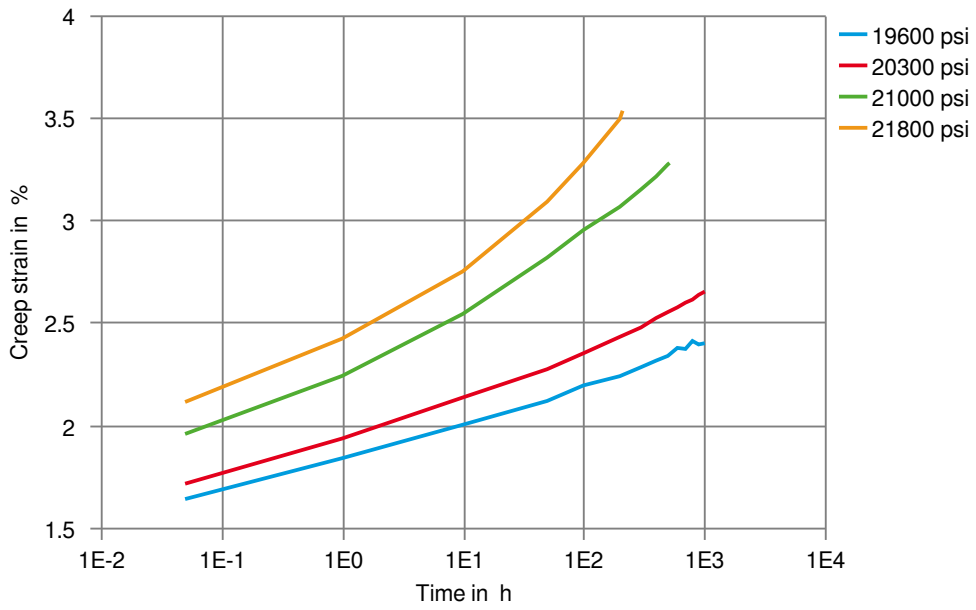
Creep modulus-time 73.4 °F (cond.)



Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

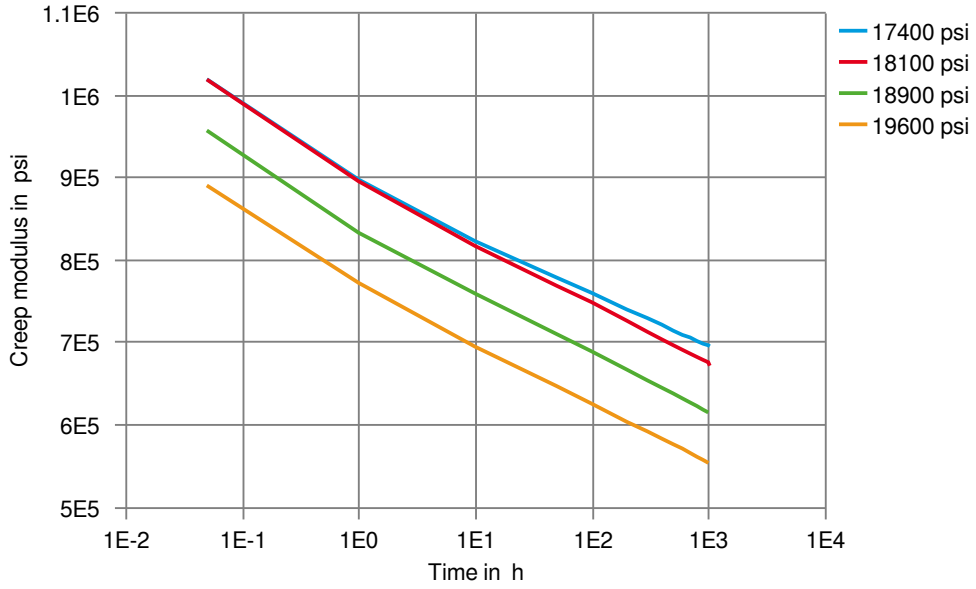
Creep strain-time 73.4 °F (cond.)



Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

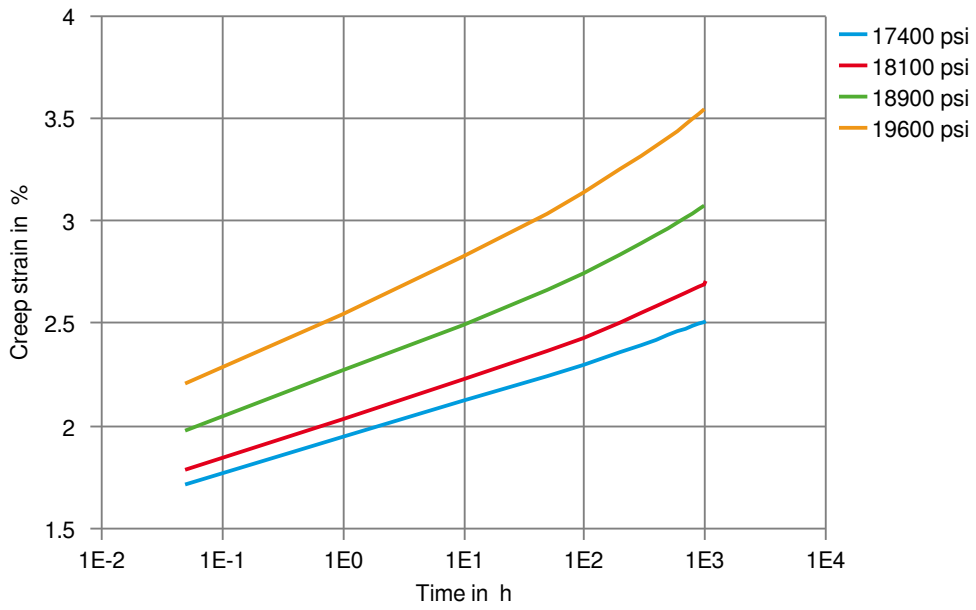
Creep modulus-time 176 °F (dry)



Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

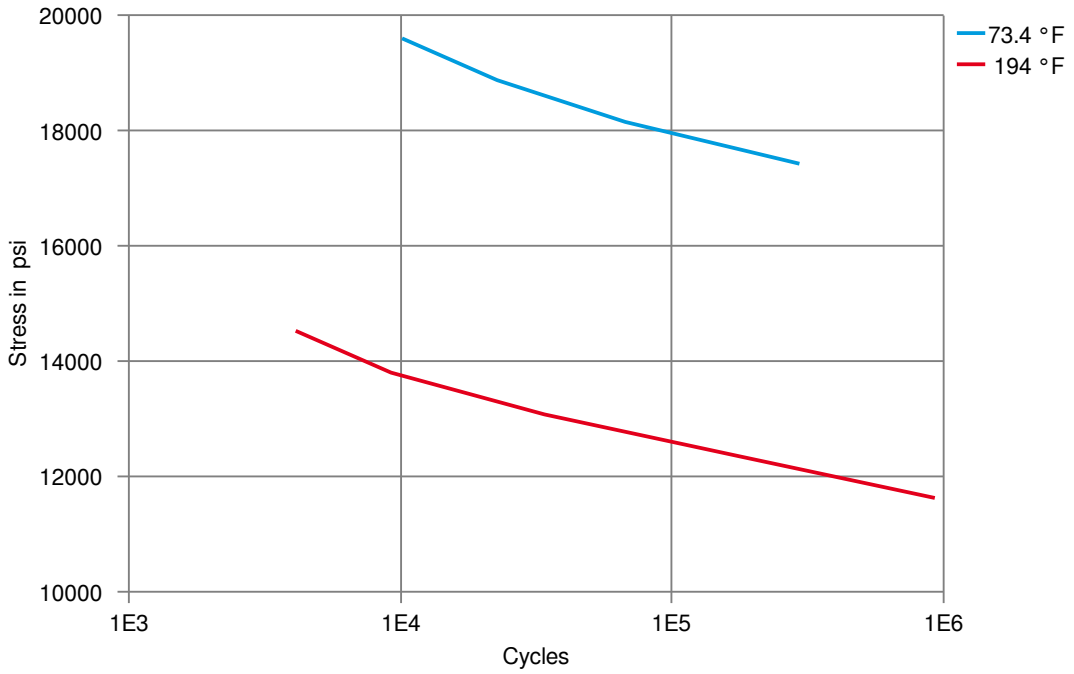
Creep strain-time 176 °F (dry)



Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

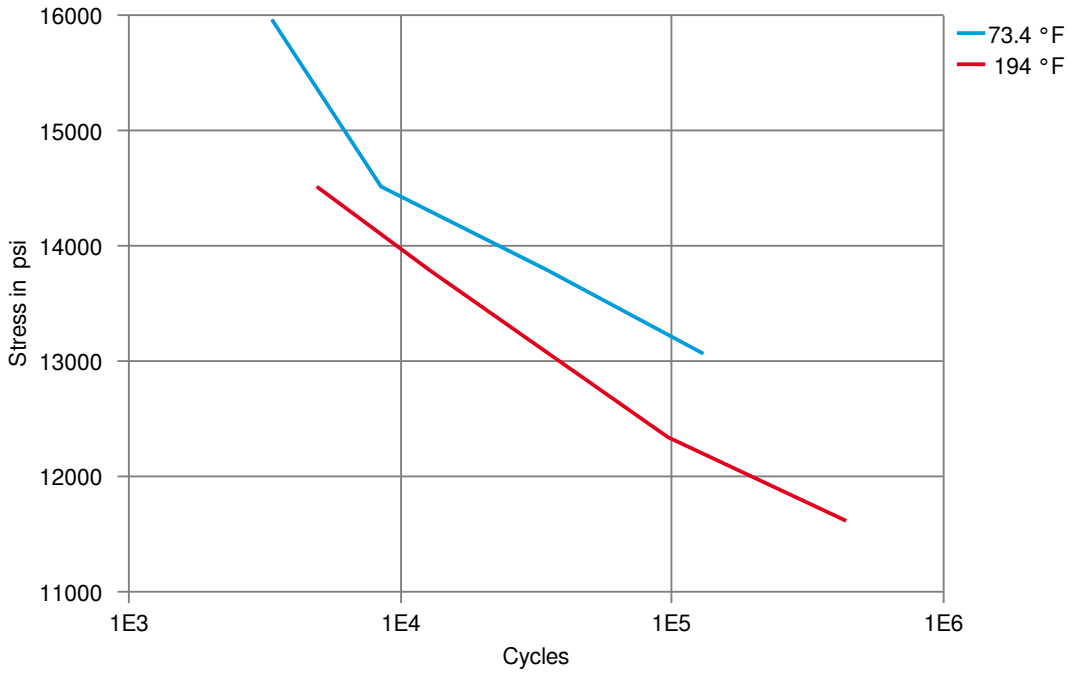
Tensile Fatigue, 10Hz, R=0.1 @ 0.16in (dry)



Zytel® XMP70G50HSLR BK314LM

NYLON RESIN

Tensile Fatigue, 10Hz, R=0.1 @ 0.16in (cond.)



Revised: 2026-08-28 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.
Copyright © 2026 Celanese or its affiliates. All rights reserved.
Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates.