Zytel® 70G30REF BK601LT

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® 70G30REF BK601LT is a 30% glass reinforced polyamide 66, hydrolysis resistant, developed for electrical and electronics applications. It is with laser transparent capability for laser welding process

Product information

Resin Identification	PA66-GF30	ISO 1043
Part Marking Code	>PA66-GF30<	ISO 11469
Infrared spectrum	available	
TGA curve	available	ISO 11358-1

Rheological properties

	dry/cond.		
Viscosity number	3740[1]/*	in³/lb	ISO 307, 1628
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	1900 / *	P	ISO 11443

[1]: formic acid 90%

Typical mechanical properties

	dry/cond.		
Tensile modulus	1.45E6 / 1.0 2E6[DS, 2]	psi	ISO 527-1/-2
Tensile stress at break, 5mm/min	27600 / 18900[DS]	psi	ISO 527-1/-2
Tensile strain at break, 5mm/min	3 / 5[DS]	%	ISO 527-1/-2
Flexural modulus	1.31E6[2] /870000[DS]	psi	ISO 178
Flexural strength	40600 / -	psi	ISO 178
Charpy impact strength, 23 °C	33.3 / 38.1	ftlb/in²	ISO 179/1eU
Charpy impact strength, -40 °C	28.5 / 28.5	ftlb/in²	ISO 179/1eU
Charpy notched impact strength, 23 °C	5.71 / 6.66	ftlb/in²	ISO 179/1eA
Charpy notched impact strength, -40 °C	4.28 / 4.28	ftlb/in²	ISO 179/1eA

[DS]: Derived from similar grade

[2]: derived from BK314LM

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Thermal properties

	dry/cond.		
Melting temperature, 10 °C/min	509 / *	°F	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	482 / *	°F	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	0.12 / *[DS]	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel, -40-23 °C	0.128 / *[DS]	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel, 55-160 °C	0.0889 / *[DS]	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	0.467 / *[DS]	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal, -40-23 °C	0.4 / *[DS]	E-4/°F	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal, 55-160 °C	0.811 / *[DS]	E-4/°F	ISO 11359-1/-2

[DS]: Derived from similar grade

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	HB / *[DS]	class	IEC 60695-11-10
Thickness tested	0.0591 / *	in	IEC 60695-11-10
Oxygen index	23 / *[DS]	%	ISO 4589-1/-2
FMVSS Class	B		ISO 3795 (FMVSS 302)

[DS]: Derived from similar grade

Electrical properties

	dry/cond.		
Volume resistivity	1E13 / 3E10	Ohm.m	IEC 62631-3-1
Surface resistivity	* / 2E13	Ohm	IEC 62631-3-2
Electric strength	965 / 813	kV/in	IEC 60243-1
Comparative tracking index	600 / -		IEC 60112

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.9 / *[DS]	%	Sim. to ISO 62
Density	0.0495 / -	lb/in³	ISO 1183

[DS]: Derived from similar grade

Injection

Drying Recommended	yes	
Drying Temperature	176	°F
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	545	°F
Min. melt temperature	527	°F
Max. melt temperature	554[3]	°F
Max. screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	212	°F
Min. mold temperature	158	°F
Max. mold temperature	248	°F

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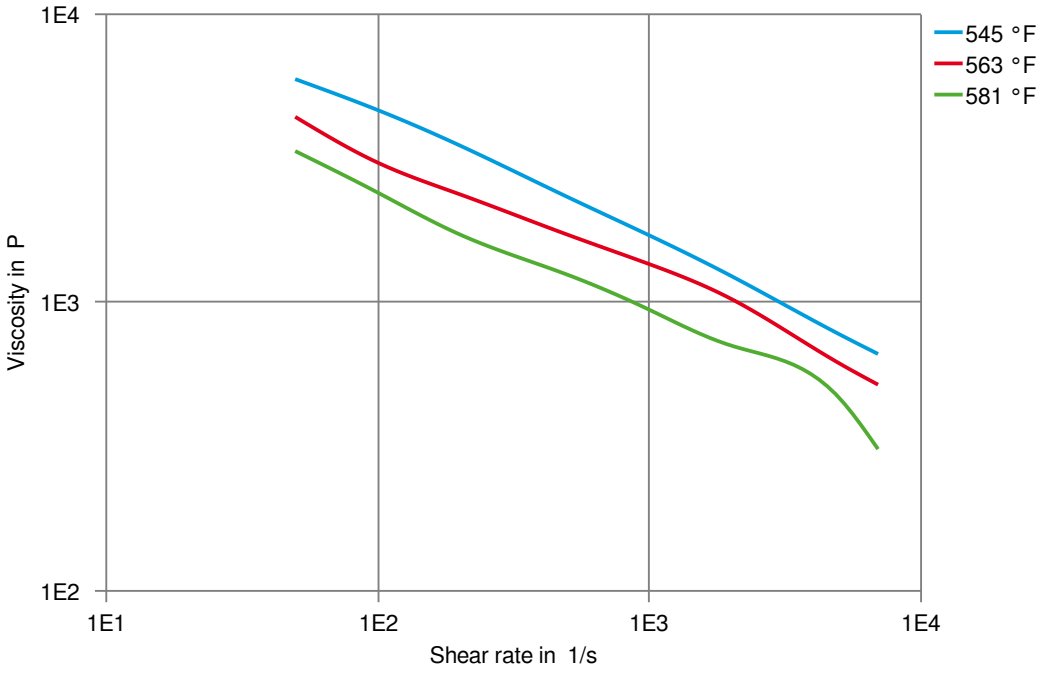
Hold pressure range	7250 - 14500	psi
Hold pressure time	0.0762	s/mil
Hold Pressure Time (h is the max. wall thickness of the part in mm)	h^2+2	s
Ejection temperature	410	°F

[3]: Melt temp can be up to 300 °C in case of moisture is low and residence time is short.

Characteristics

Processing	Injection Molding
Additives	Release agent, Low halide content
Special characteristics	Heat stabilized or stable to heat, Hydrolysis resistant

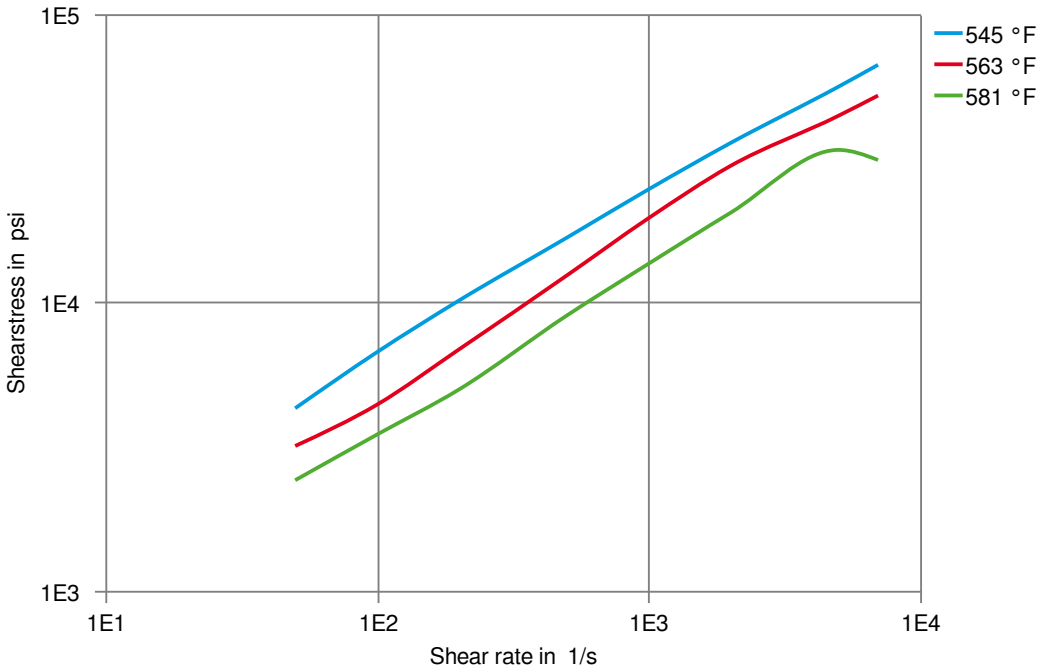
Viscosity-shear rate



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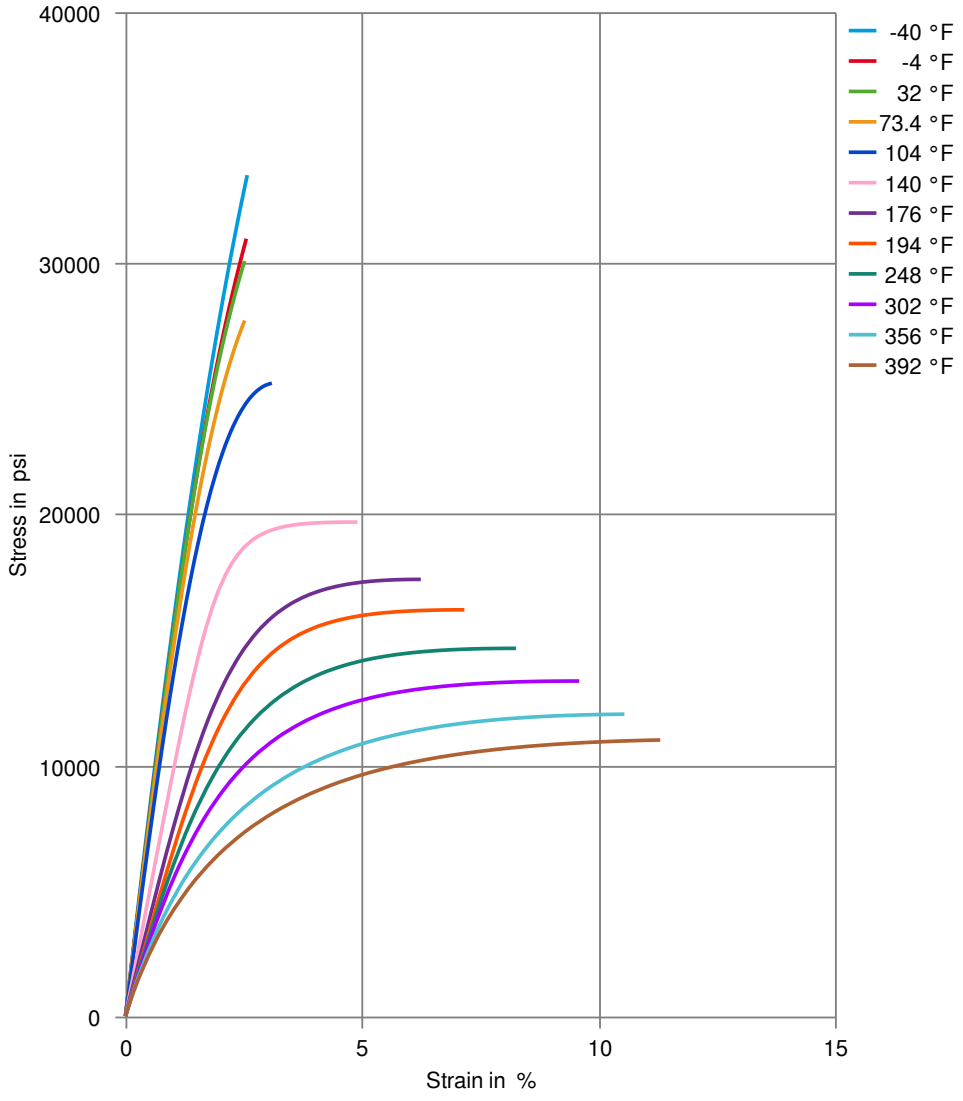
Shearstress-shear rate



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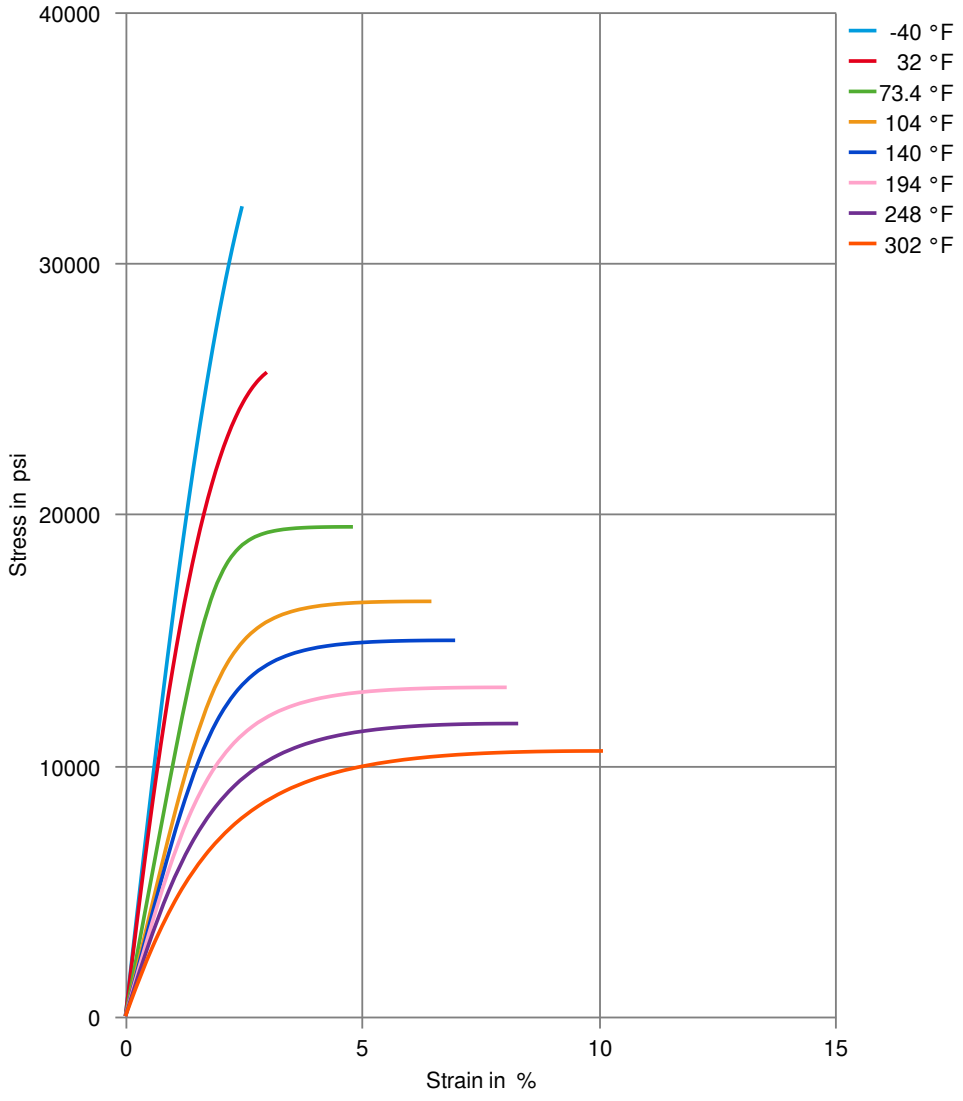
Stress-strain (dry)



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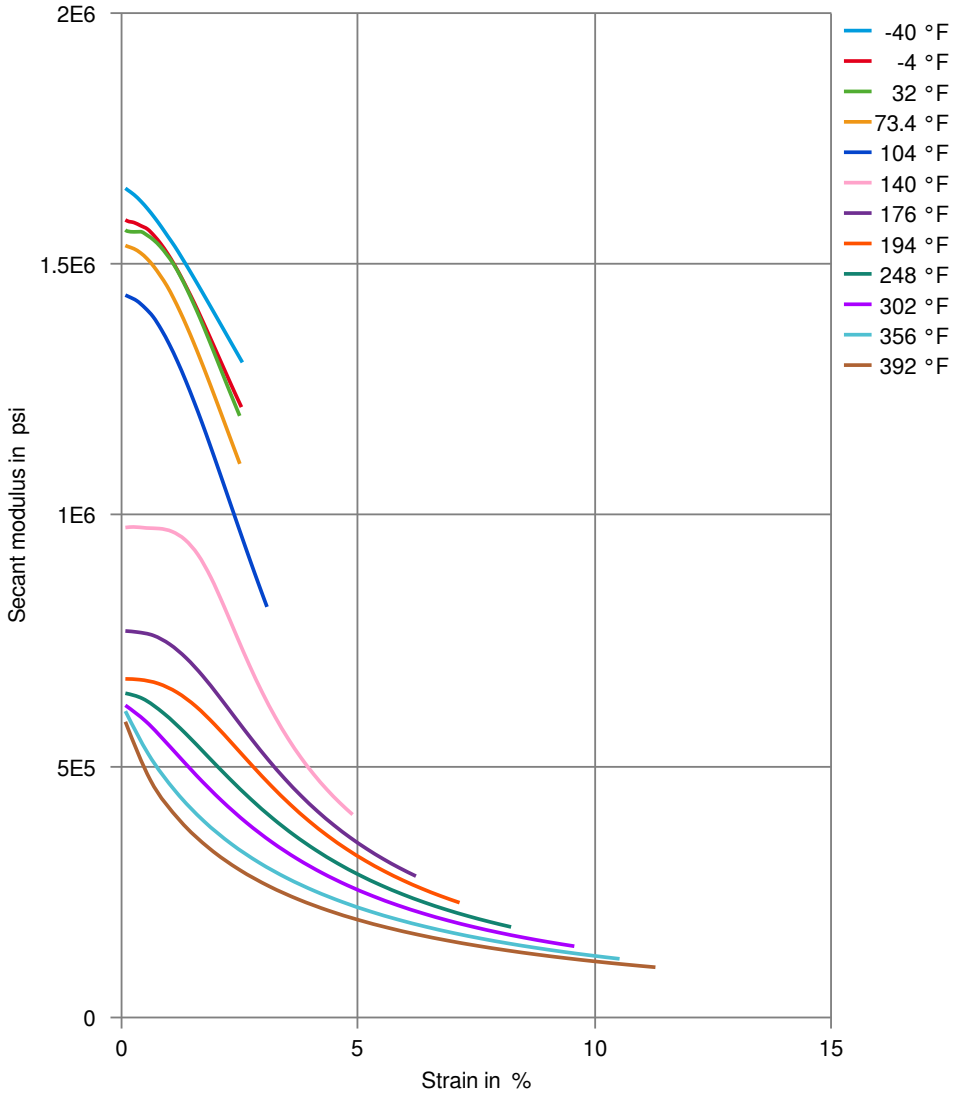
Stress-strain (cond.)



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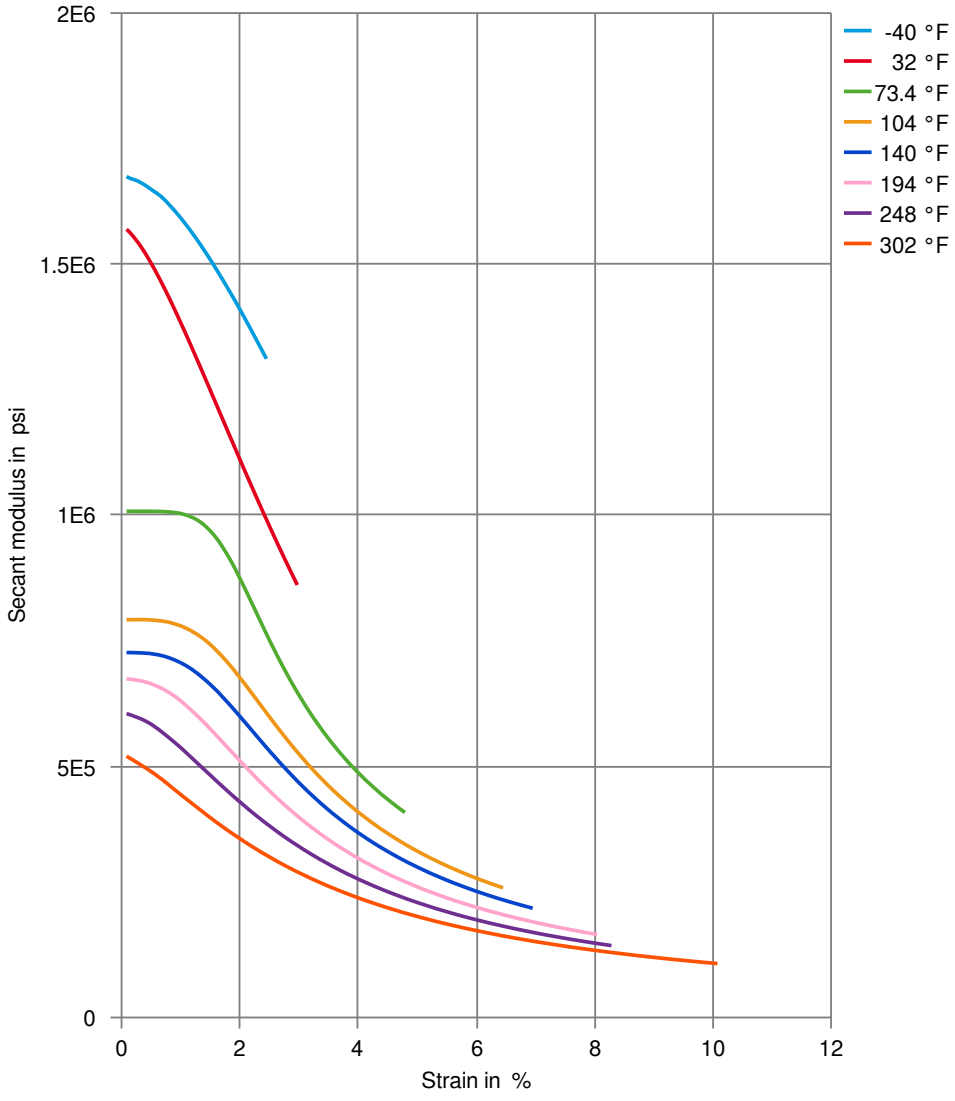
Secant modulus-strain (dry)



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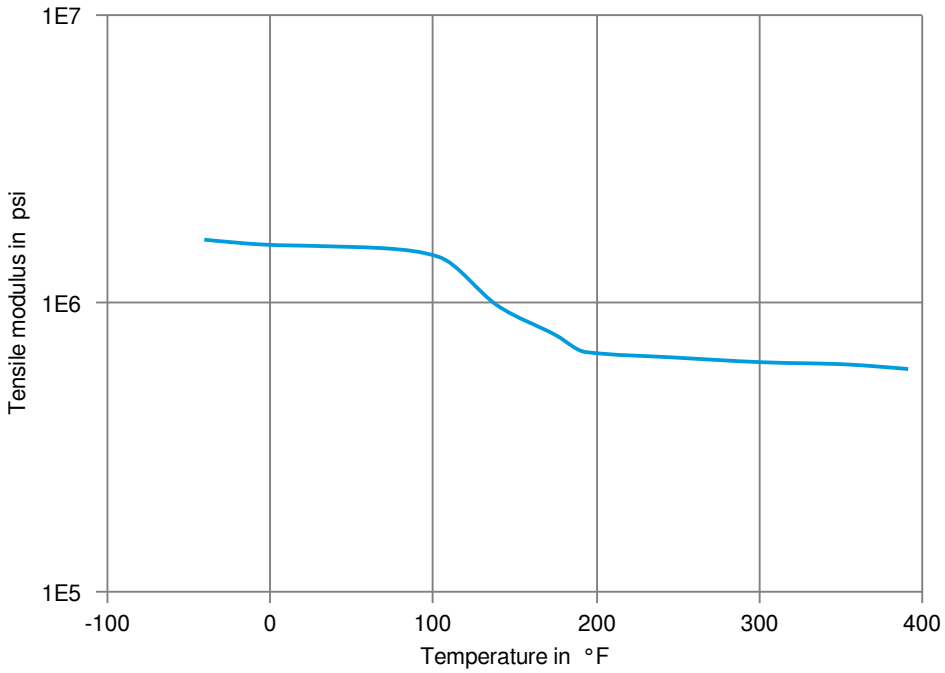
Secant modulus-strain (cond.)



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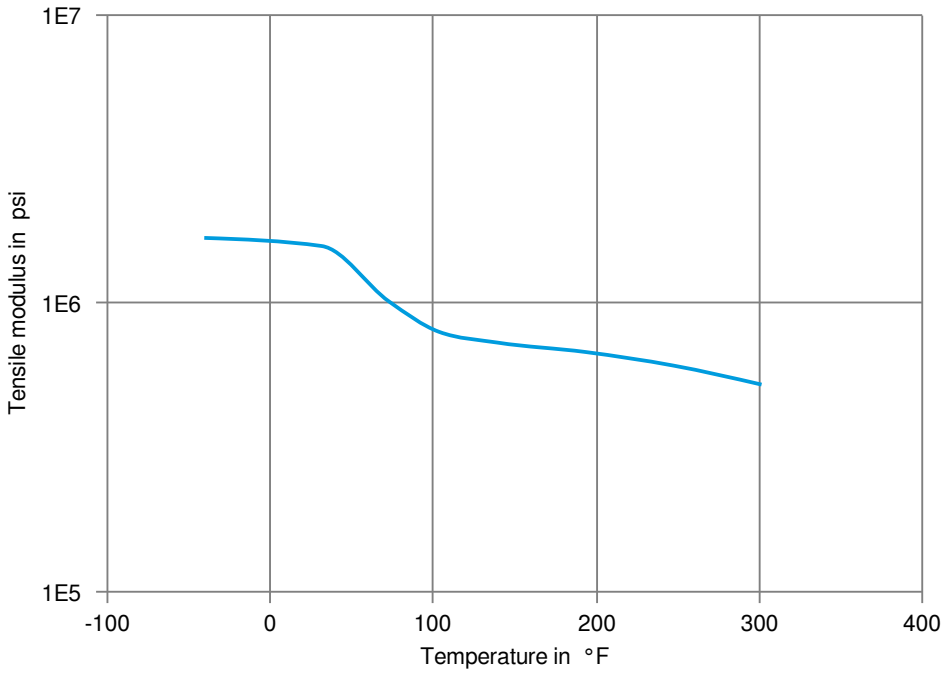
Tensile modulus-temperature (dry)



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Tensile modulus-temperature (cond.)



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Chemical Media Resistance

Acids

- ✔ Acetic Acid (5% by mass), 23°C
- ✔ Citric Acid solution (10% by mass), 23°C
- ✔ Lactic Acid (10% by mass), 23°C
- ✘ Hydrochloric Acid (36% by mass), 23°C
- ✘ Nitric Acid (40% by mass), 23°C
- ✘ Sulfuric Acid (38% by mass), 23°C
- ✘ Sulfuric Acid (5% by mass), 23°C
- ✘ Chromic Acid solution (40% by mass), 23°C

Bases

- ✘ Sodium Hydroxide solution (35% by mass), 23°C
- ✔ Sodium Hydroxide solution (1% by mass), 23°C
- ✔ Ammonium Hydroxide solution (10% by mass), 23°C

Alcohols

- ✔ Isopropyl alcohol, 23°C
- ✔ Methanol, 23°C
- ✔ Ethanol, 23°C

Hydrocarbons

- ✔ n-Hexane, 23°C
- ✔ Toluene, 23°C
- ✔ iso-Octane, 23°C

Ketones

- ✔ Acetone, 23°C

Ethers

- ✔ Diethyl ether, 23°C

Mineral oils

- ✔ SAE 10W40 multigrade motor oil, 23°C
- ✔ SAE 10W40 multigrade motor oil, 130°C
- ✔ SAE 80/90 hypoid-gear oil, 130°C
- ✔ Insulating Oil, 23°C
- ✔ Hydraulic oil Pentosin CHF 202, 125°C

Standard Fuels

- ✔ ISO 1817 Liquid 1 - E5, 60°C
- ✔ ISO 1817 Liquid 2 - M15E4, 60°C
- ✔ ISO 1817 Liquid 3 - M3E7, 60°C
- ✔ ISO 1817 Liquid 4 - M15, 60°C
- ✔ Standard fuel without alcohol (pref. ISO 1817 Liquid C), 23°C
- ✔ Standard fuel with alcohol (pref. ISO 1817 Liquid 4), 23°C
- ✔ Diesel fuel (pref. ISO 1817 Liquid F), 23°C
- ✘ Diesel fuel (pref. ISO 1817 Liquid F), 90°C
- ✘ Diesel fuel (pref. ISO 1817 Liquid F), >90°C
- ✘ Diesel EN 590, 100°C

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Salt solutions

- ✔ Sodium Chloride solution (10% by mass), 23°C
- ✘ Sodium Hypochlorite solution (10% by mass), 23°C
- ✔ Sodium Carbonate solution (20% by mass), 23°C
- ✔ Sodium Carbonate solution (2% by mass), 23°C
- ✘ Zinc Chloride solution (50% by mass), 23°C

Other

- ✔ Ethyl Acetate, 23°C
- ✘ Hydrogen peroxide, 23°C
- ✔ DOT No. 4 Brake fluid, 130°C
- ✔ DOT No. 4 Brake fluid, 120°C
- ✔ Ethylene Glycol (50% by mass) in water, 108°C
- ✔ 1% nonylphenoxy-polyethyleneoxy ethanol in water, 23°C
- ✔ 50% Oleic acid + 50% Olive Oil, 23°C
- ✔ Water, 23°C
- ✔ Water, 90°C
- ✘ Phenol solution (5% by mass), 23°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: 2025-04-30 Source: Celanese Materials Database

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