Celanese
The chemistry inside innovation™

Zytel® 70G30REF 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® 70G30REF BK314LM is a 30% glass reinforced hydrolysis resistant polyamide 66 developed for electrical and electronics applications.

It is well suited for laser marking.

Product information

Resin Identification	PA66-GF30	ISO 1043
Part Marking Code	>PA66-GF30<	ISO 11469
ISO designation	ISO 16396-PA66,GF30,M1CGO2RW,S14-100	

Rheological properties

	dry/cond.		
Viscosity number	124[1]/*	cm³/g	ISO 307, 1628
Moulding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.0 / -	%	ISO 294-4, 2577
Melt viscosity , @ 1000 sec-1, 280 °C	120 / *	Pa.s	ISO 11443

[1]: formic acid 90%

Typical mechanical properties

	dry/cond.		
Tensile modulus	10000 / 7000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	190 / 130	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	3 / 5	%	ISO 527-1/-2
Flexural modulus	9000 / 6000	MPa	ISO 178
Flexural strength	280 / -	MPa	ISO 178
Charpy impact strength, 23 °C	55 / 80	kJ/m²	ISO 179/1eU
Charpy impact strength, -30 °C	50 / 50	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23 °C	10 / 11	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30 °C	9 / -	kJ/m²	ISO 179/1eA
Poisson's ratio	0.34 / 0.35		

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The chemistry inside innovation™

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NYLON RESIN

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	266 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	75 / 20	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	254 / *	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	258 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	23 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	22 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	16 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	72 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	84 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	146 / *	E-6/K	ISO 11359-1/-2
Thermal conductivity of melt	0.25	W/(m K)	ISO 22007-2
Specific heat capacity of melt	2000	J/(kg K)	ISO 22007-4

Flammability

	dry/cond.		
Burning Behav. at 1.5mm nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	IEC 60695-11-10
Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.4 / *	mm	IEC 60695-11-10
Oxygen index	23 / *	%	ISO 4589-1/-2
Glow Wire Flammability Index, 1.5mm	625 / -	°C	IEC 60695-2-12
Glow Wire Ignition Temperature, 1.5mm	650 / -	°C	IEC 60695-2-13
FMVSS Class	B		ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	26	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Relative permittivity, 1MHz	3.6 / -		IEC 62631-2-1
Dissipation factor, 1MHz	180 / -	E-4	IEC 62631-2-1
Volume resistivity	>1E13 / 1E11	Ohm.m	IEC 62631-3-1
Electric strength	37 / 36	kV/mm	IEC 60243-1
Comparative tracking index	600 / -		IEC 60112

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.9 / *	%	Sim. to ISO 62
Density	1370 / -	kg/m³	ISO 1183

Injection

Drying Recommended	yes	
Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	2 - 4	h
Processing Moisture Content	≤0.2	%
Melt Temperature Optimum	295	°C
Min. melt temperature	285	°C
Max. melt temperature	305	°C
Screw tangential speed	≤0.2	m/s

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Mold Temperature Optimum	100	°C
Min. mould temperature	70	°C
Max. mould temperature	120	°C
Hold pressure range	50 - 100	MPa
Hold pressure time	3	s/mm
Ejection temperature	227	°C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Release agent, Low halide content
Special characteristics	Heat stabilised or stable to heat, Hydrolysis resistant

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Bosch	N28 BN02-GF126	
Renault-Nissan	UB18a, No Spec, Special Part Approval, See Your CE Account Manager.	
Renault-Nissan	UB27b, No Spec, Special Part Approval, See Your CE Account Manager.	
Renault-Nissan	UB29c, No Spec, Special Part Approval, See Your CE Account Manager.	
Stellantis	B62 0300 / 61/223E-217M/C1	01378_19_02647
VW Group	VW 50133 PA66-6-A	

Celanese
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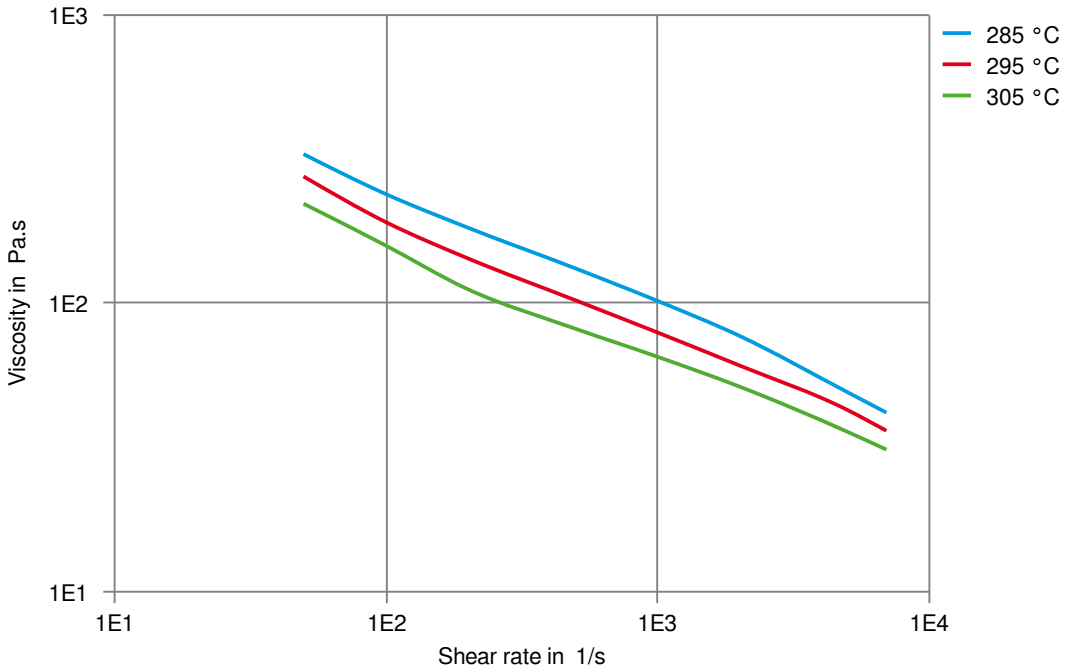
Viscosity-shear rate



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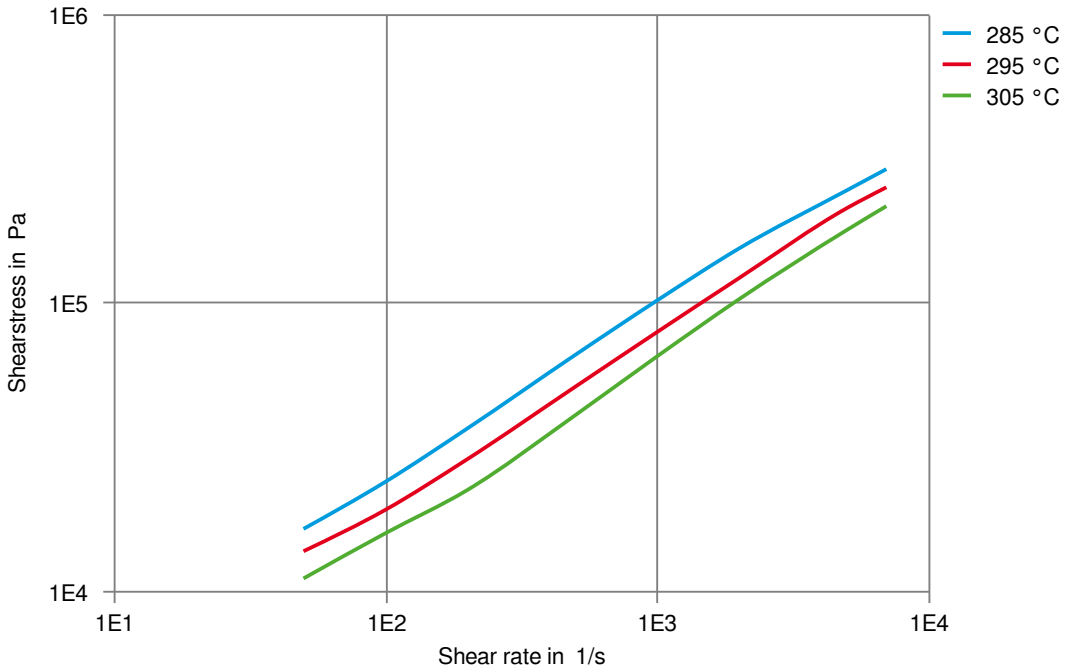
Shearstress-shear rate



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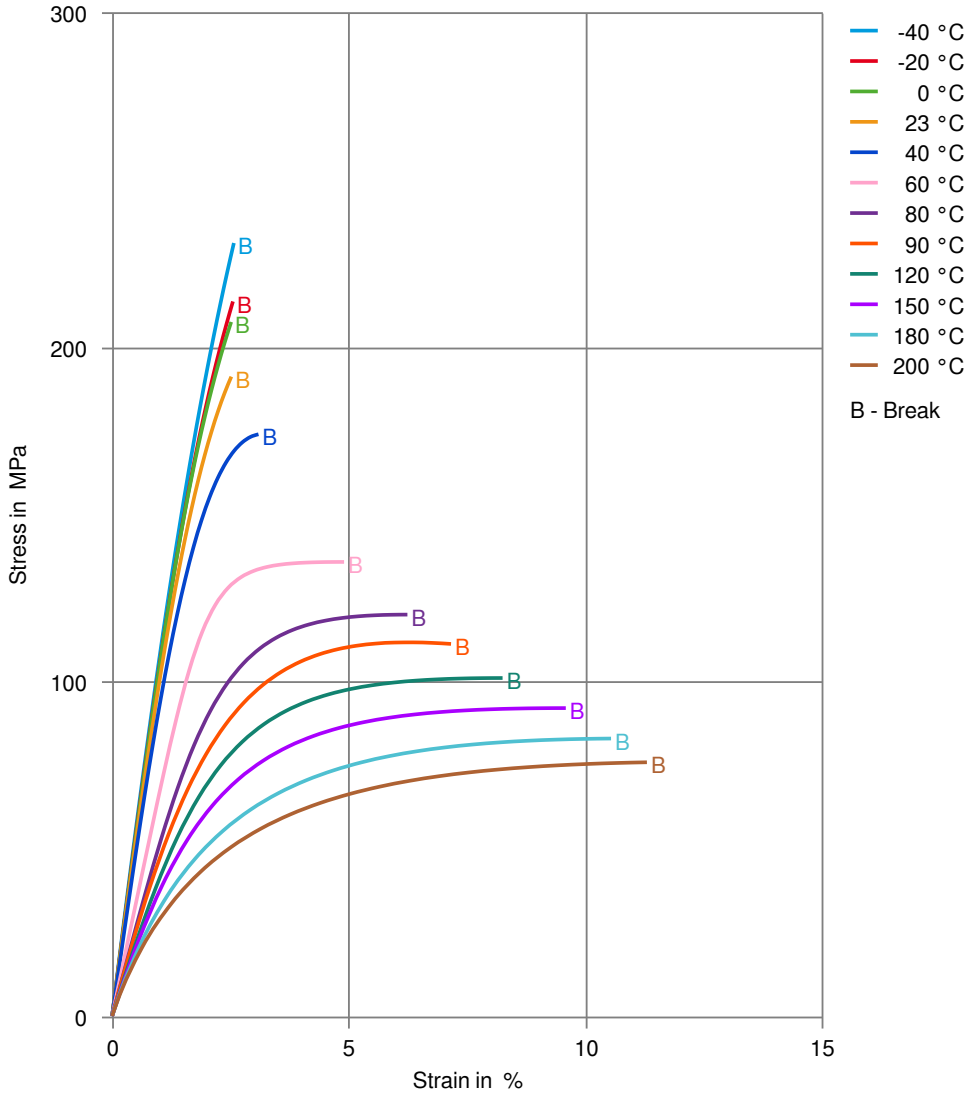
Stress-strain (dry)



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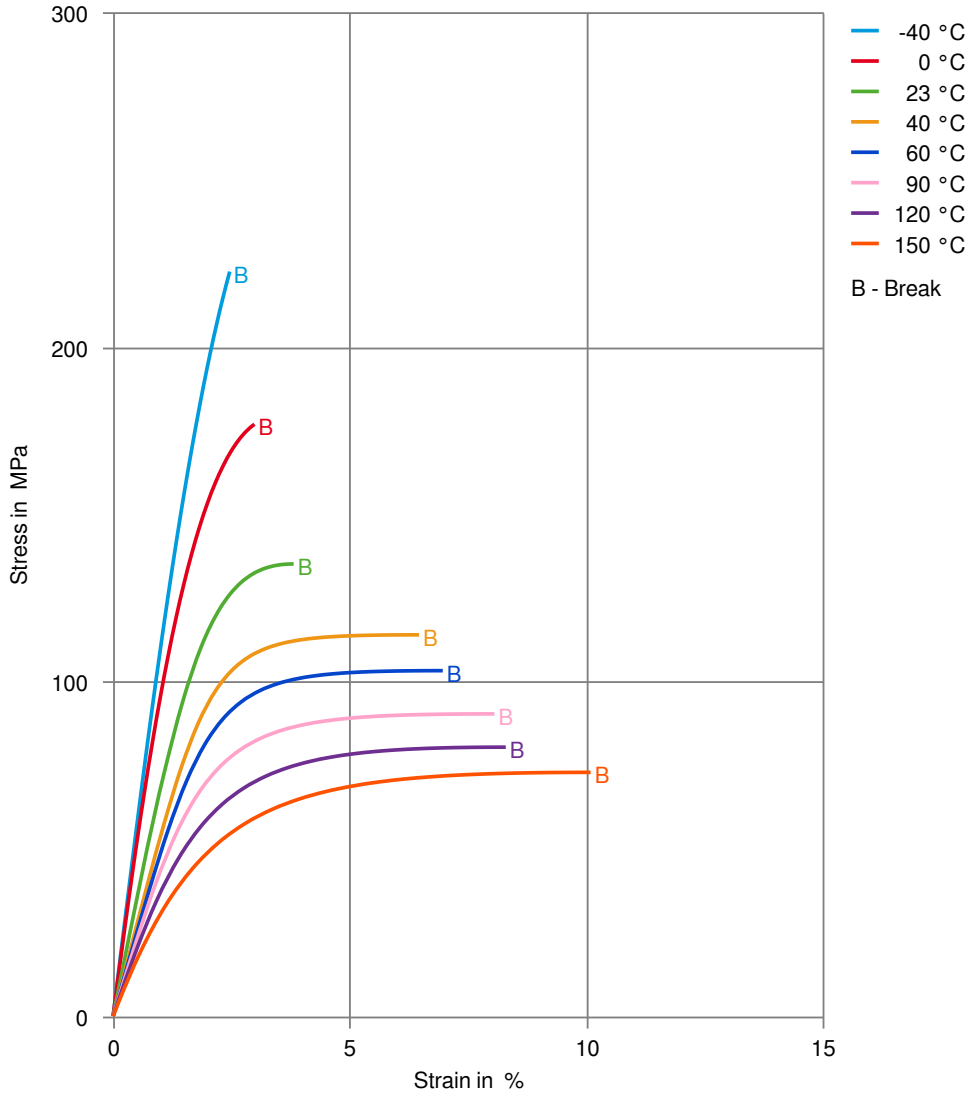
Zytel® 70G30REF BK314LM

NYLON RESIN

Stress-strain (cond.)



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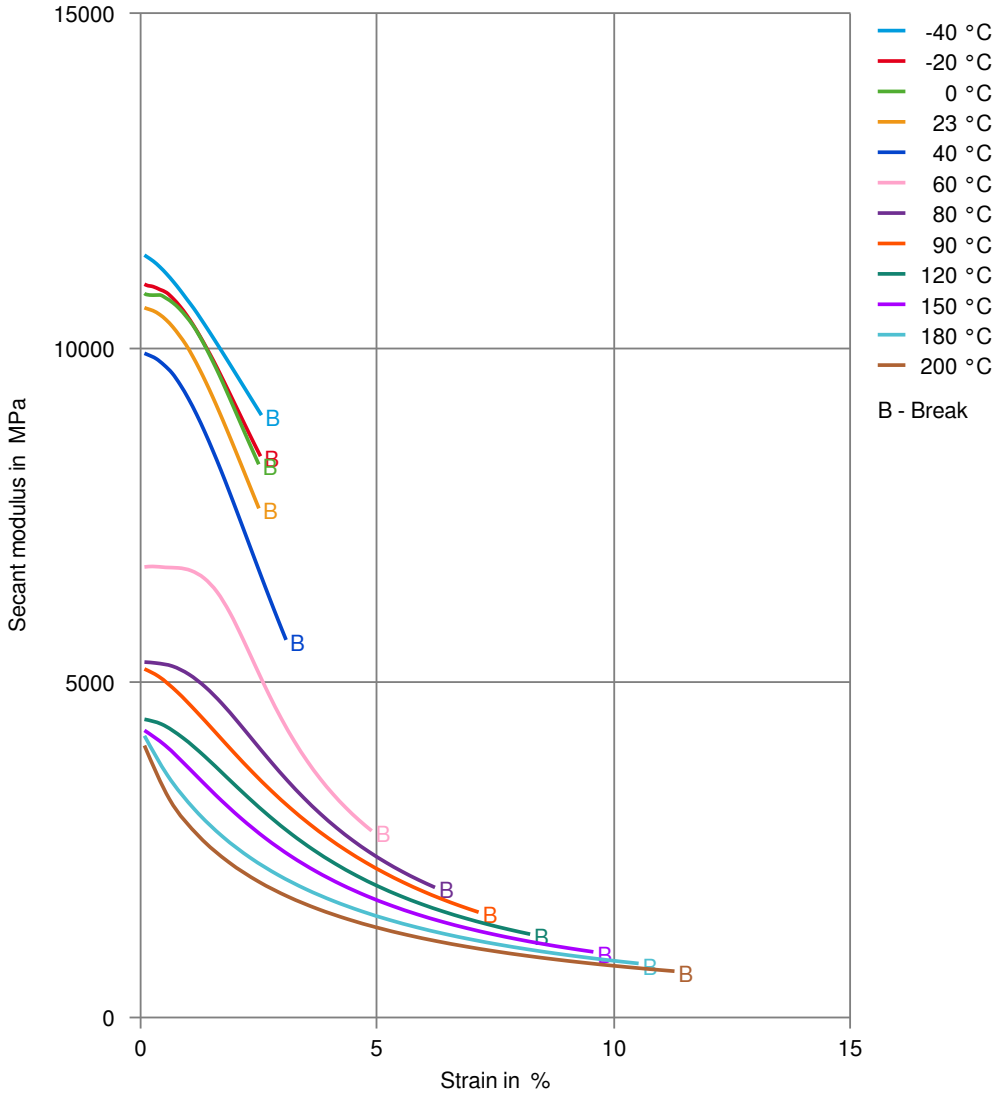
NYLON RESIN

Secant modulus-strain (dry)



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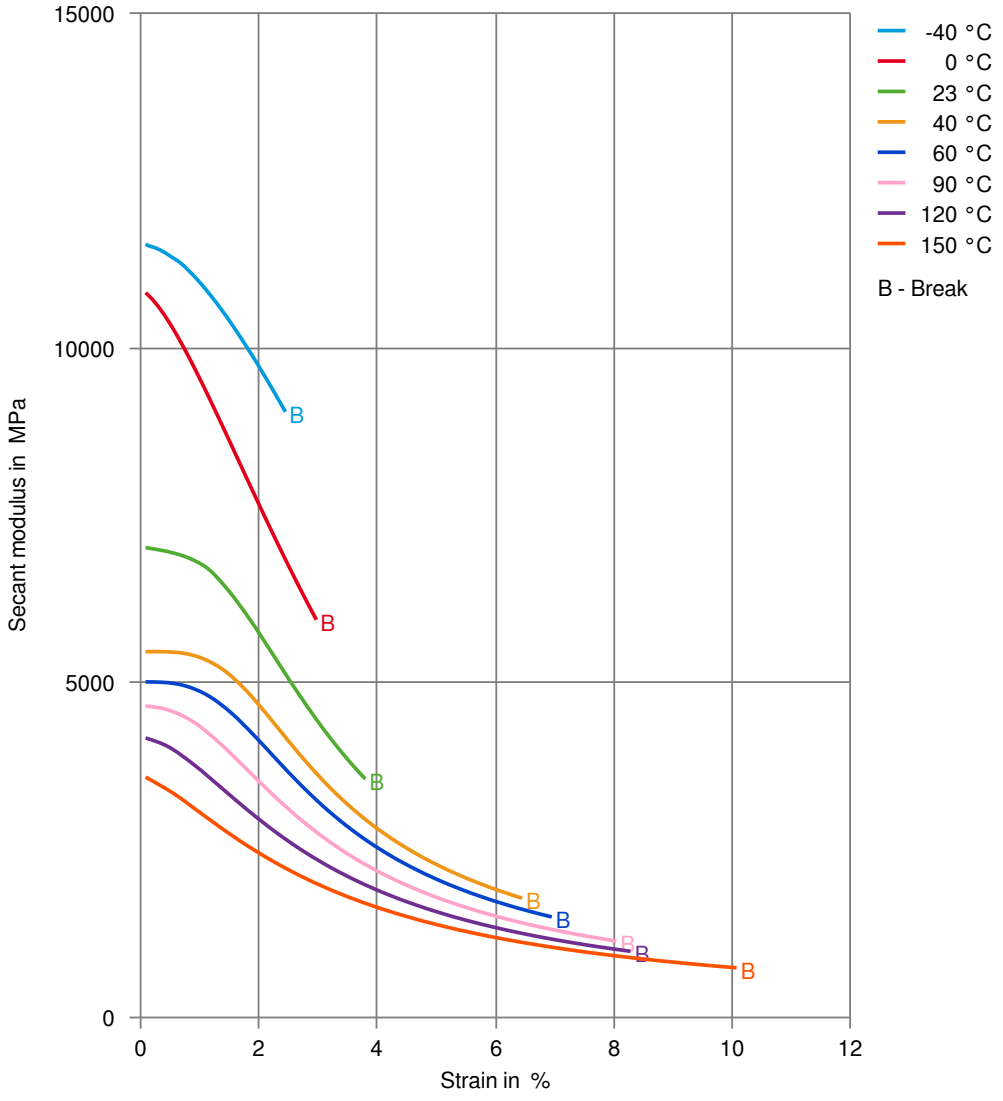
NYLON RESIN

Secant modulus-strain (cond.)



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Zytel® 70G30REF BK314LM

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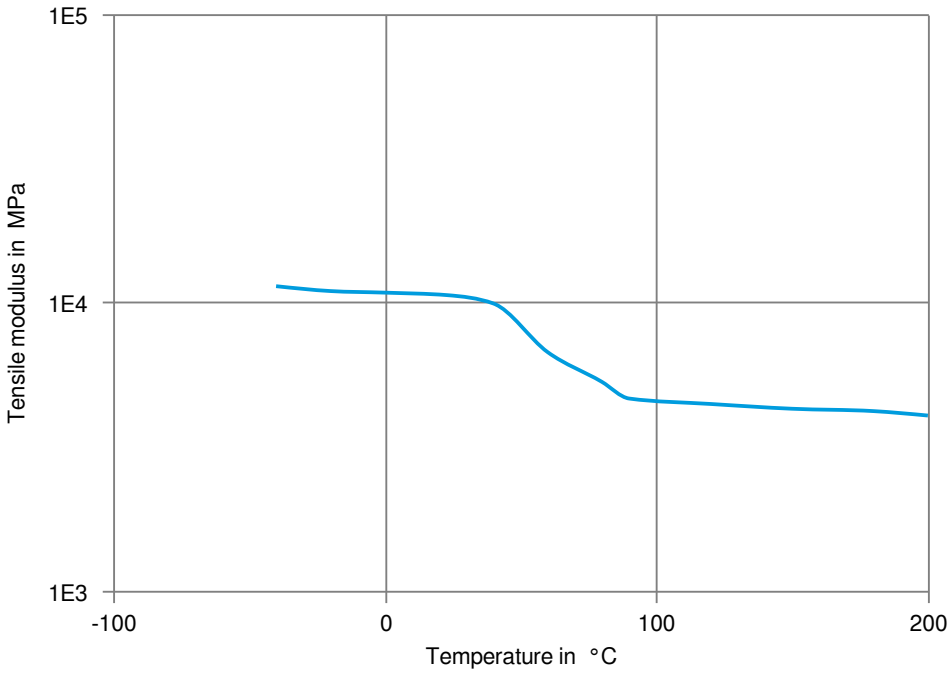
Tensile modulus-temperature (dry)



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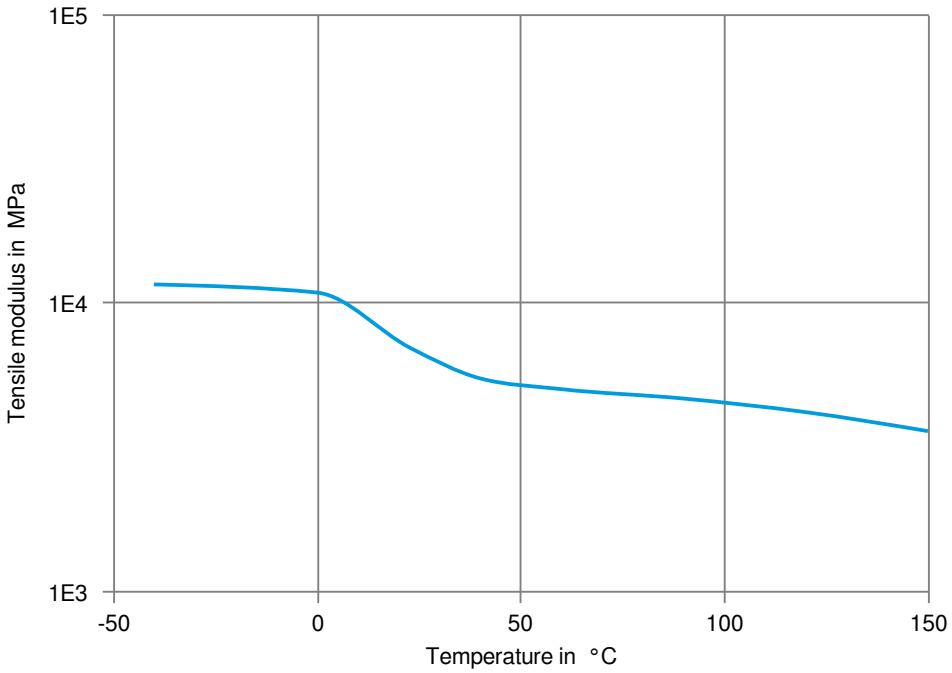
NYLON RESIN

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