Celanese
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Zytel® BM7300THS BK317

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® BM7300THS is an unreinforced, heat stabilized, lubricated, toughened polyamide 6 for blow molding.

Product information

Resin Identification	PA6-HI	ISO 1043
Part Marking Code	>PA6-HI<	ISO 11469
ISO designation	ISO 16396-PA6-I,,M1CG1HR,S14-020	

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	1.1 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	1.1 / -	%	ISO 294-4, 2577
Melt viscosity , @ 1000 sec-1, 280 °C	440 / *	Pa.s	ISO 11443

Typical mechanical properties

	dry/cond.		
Tensile modulus	2200 / 600	MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	60 / -	MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	4.2 / -	%	ISO 527-1/-2
Nominal strain at break	>50 / -	%	ISO 527-1/-2
Charpy impact strength, 23 °C	N / N	kJ/m²	ISO 179/1eU
Charpy impact strength, -30 °C	N / N[A]	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23 °C	80 / 150	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30 °C	22 / 21	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40 °C	15 / 14	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23 °C	38 / 120	kJ/m²	ISO 180/1A
Izod notched impact strength, -30 °C	18.0 / 20.0	kJ/m²	ISO 180/1A
Poisson's ratio	0.39 / 0.47		

[A]: Assessed

Thermal properties

	dry/cond.		
Melting temperature, 10 °C/min	220 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10 °C/min	60 / 10	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	52 / *	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	100 / *	°C	ISO 75-1/-2

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Flammability

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

Physical/Other properties

	dry/cond.		
Density	1090 / -	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	270	°C
Min. melt temperature	260	°C
Max. melt temperature	280	°C
Screw tangential speed	≤0.2	m/s
Mold Temperature Optimum	70	°C
Min. mould temperature	50	°C
Max. mould temperature	100	°C
Hold pressure range	50 - 100	MPa
Hold pressure time	3	s/mm

Extrusion

Drying Temperature	80	°C
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.06	%
Melt Temperature Range	235 - 250	°C

Blow Molding

Drying Recommended	yes	
Drying Temperature	100 - 110	°C
Drying Time, Dehumidified Dryer	4 - 6	h
Processing Moisture Content	≤0.03	%
Melt Temperature Optimum	245	°C
Melt Temperature Range	255 - 265	°C
Swell ratio	2.4	
Mold Temperature Optimum	80	°C
Mold Temperature Range	80 - 110	°C

Characteristics

Processing	Injection Moulding, Blow Moulding
Delivery form	Pellets
Special characteristics	Heat stabilised or stable to heat

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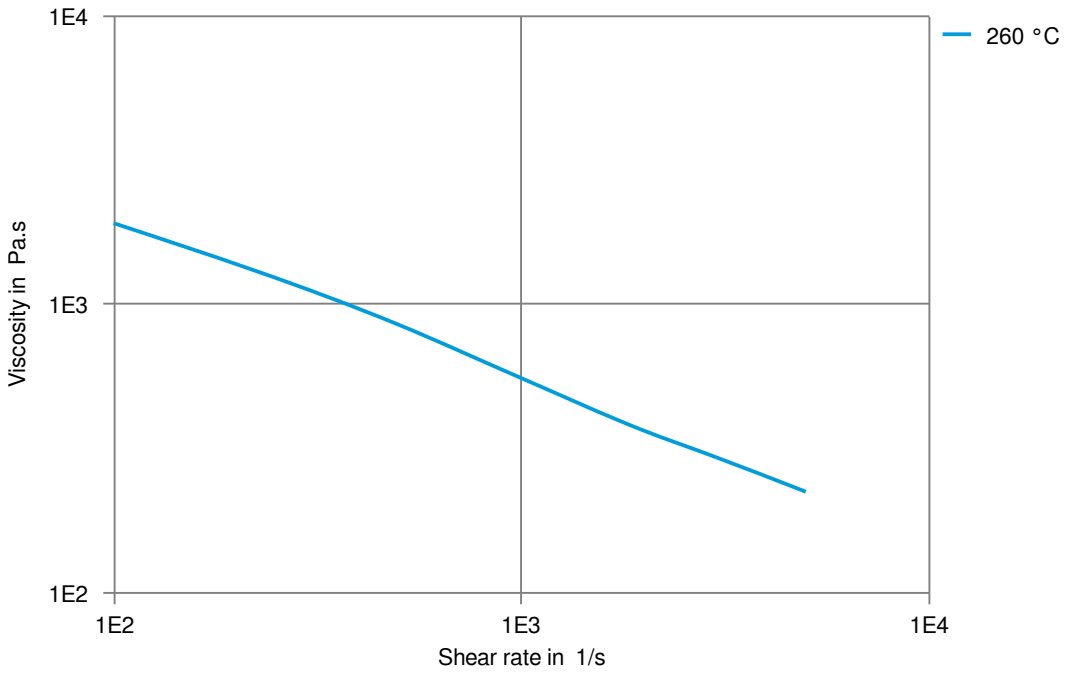
Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
Mercedes-Benz	DBL5408.21 PA6-HI	
Stellantis	B62 0300 / 61/213M+/215E+/11/H115 + S62 0001 (130°C)	01994_15_00068
VW Group	VW 50125 PA6-004	
VW Group	VW 50134 PA6-2-A	

Viscosity-shear rate



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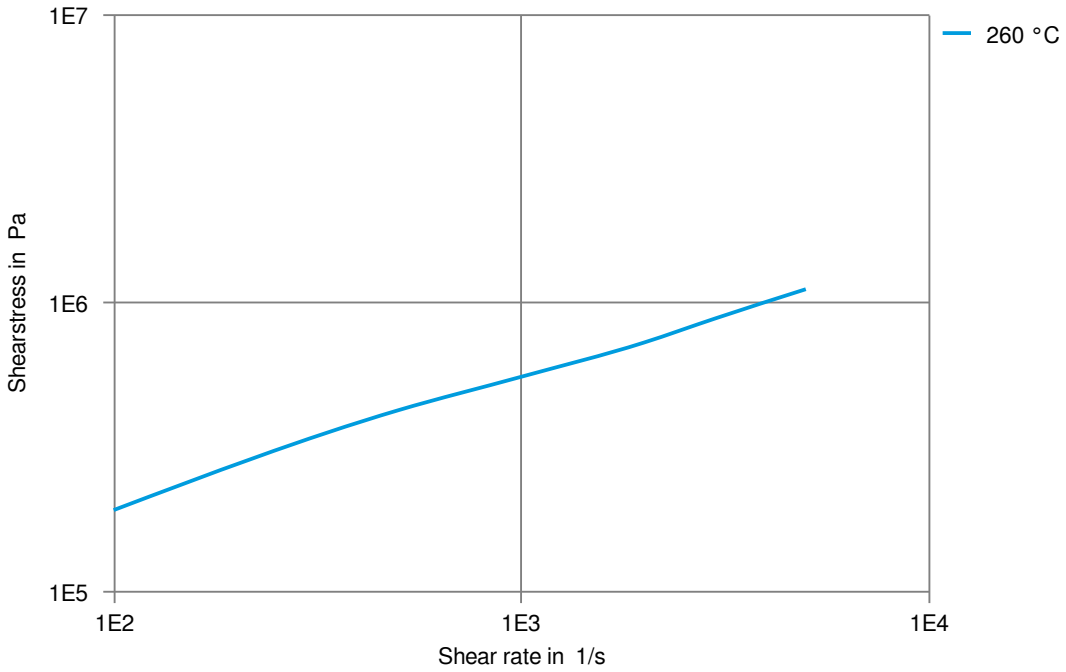
Shearstress-shear rate



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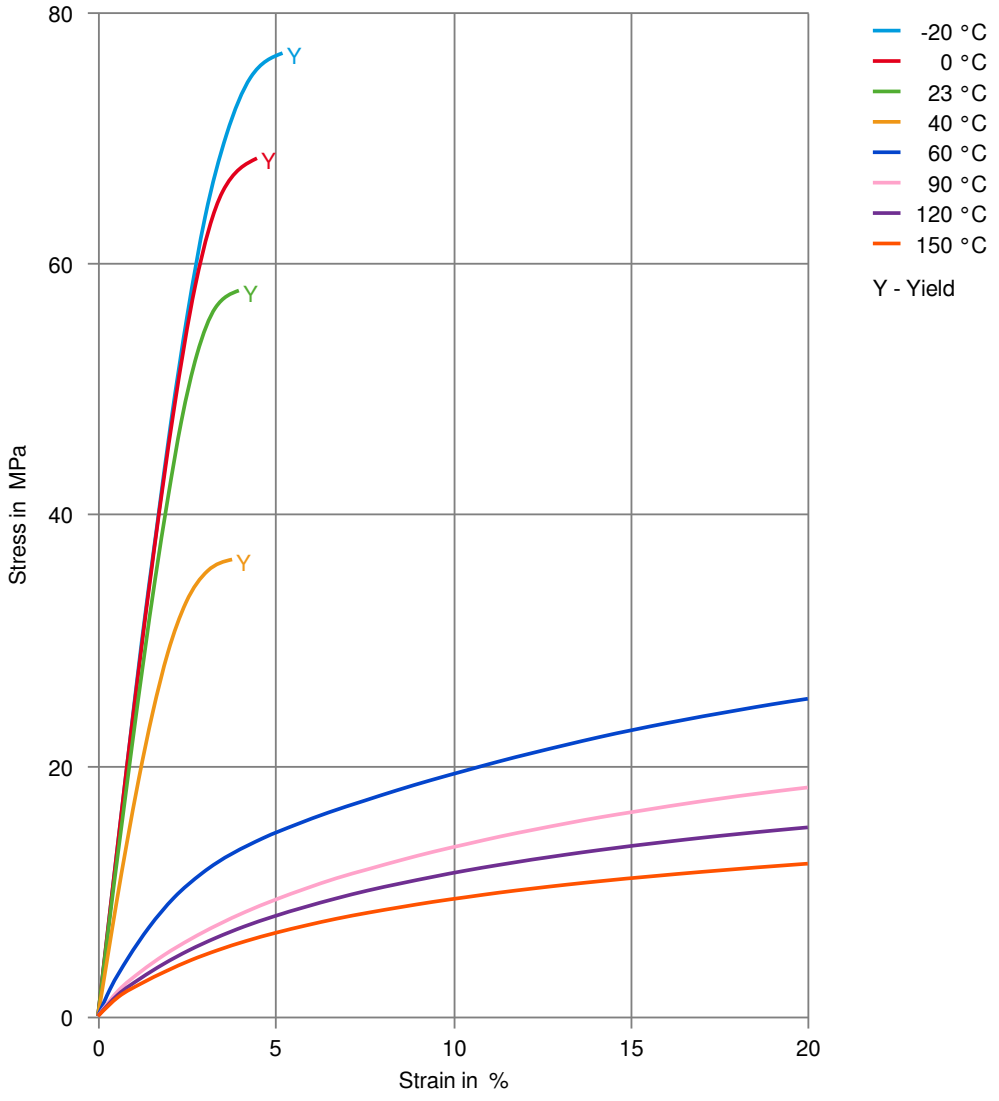
Stress-strain (dry)



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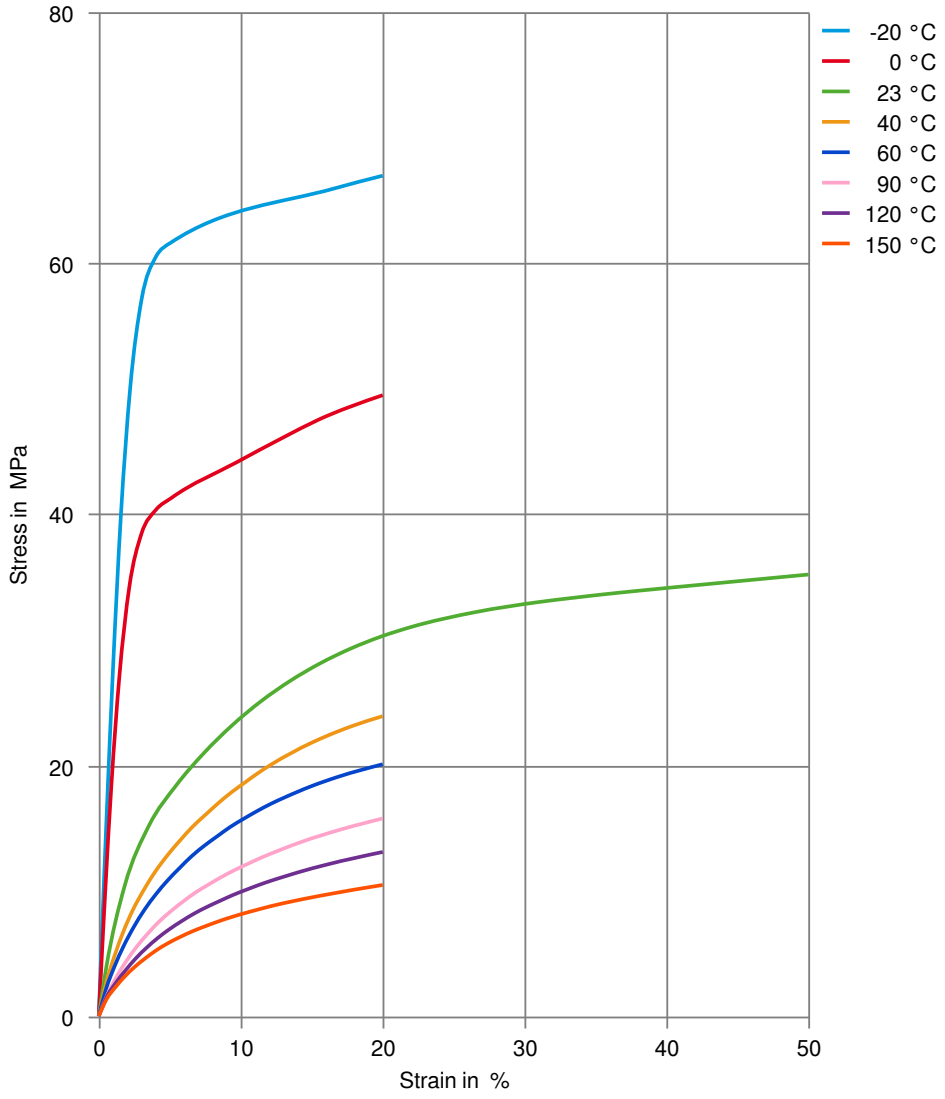
NYLON RESIN

Stress-strain (cond.)



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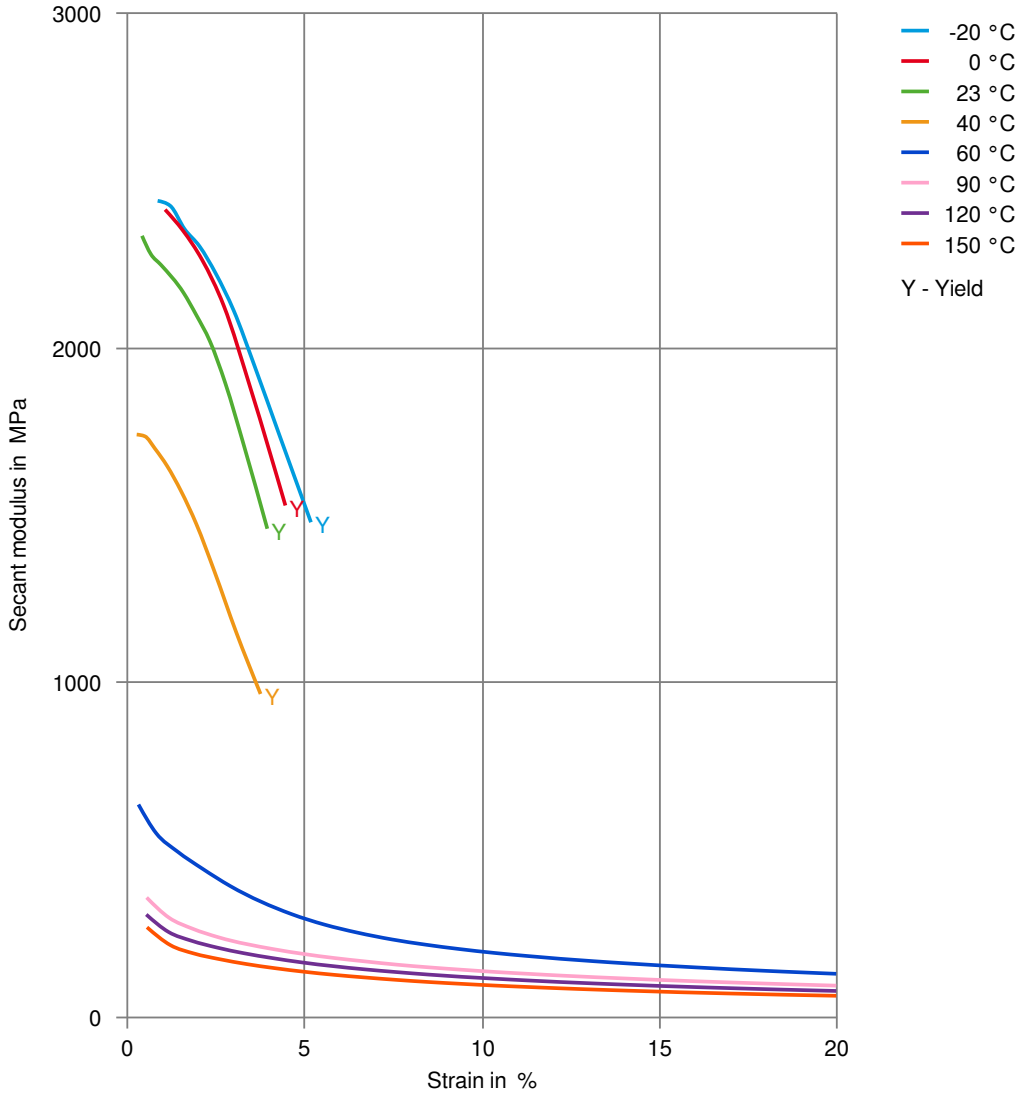
Secant modulus-strain (dry)



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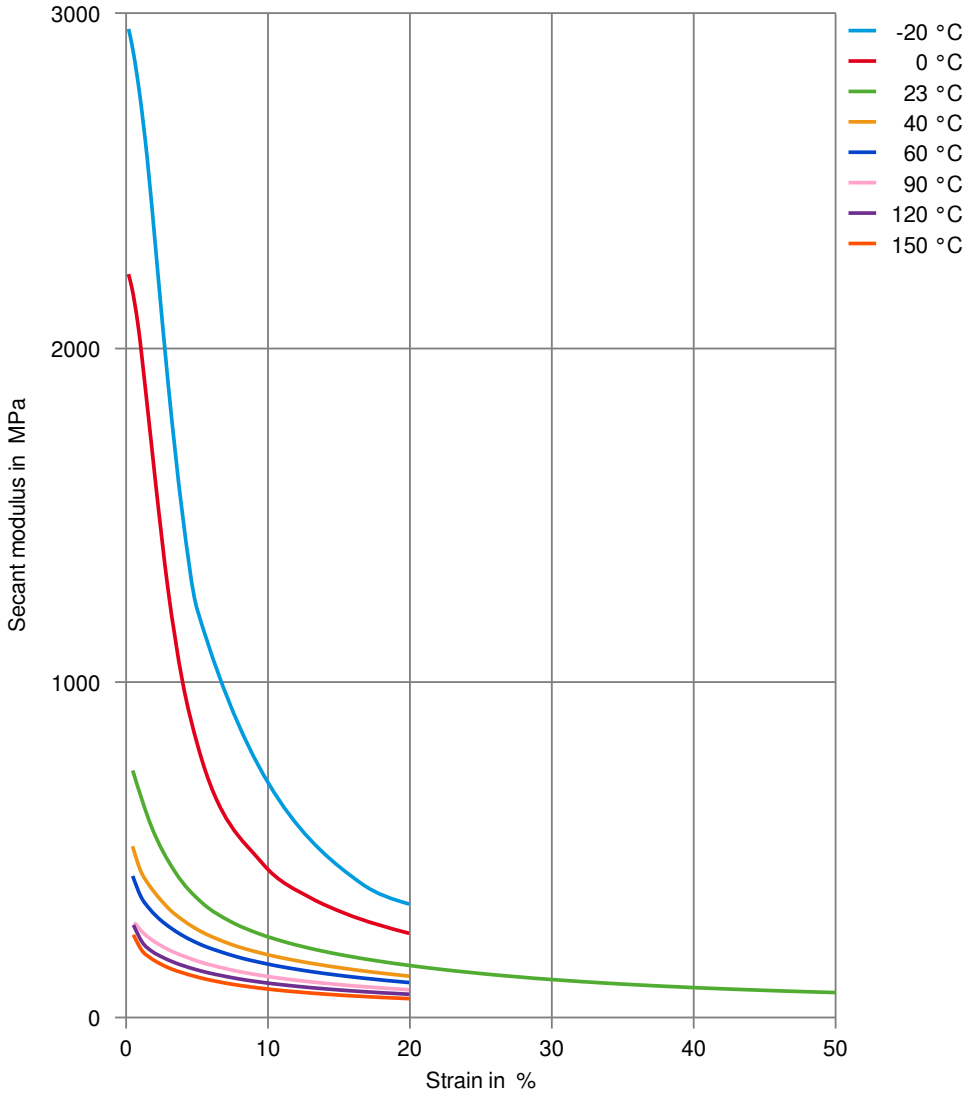
Secant modulus-strain (cond.)



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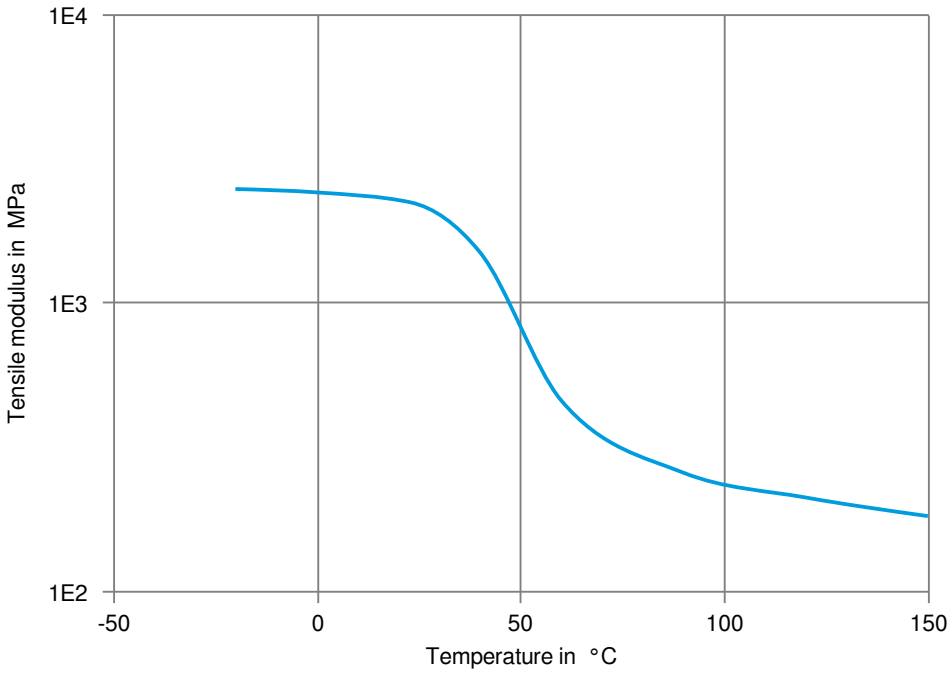
Tensile modulus-temperature (dry)



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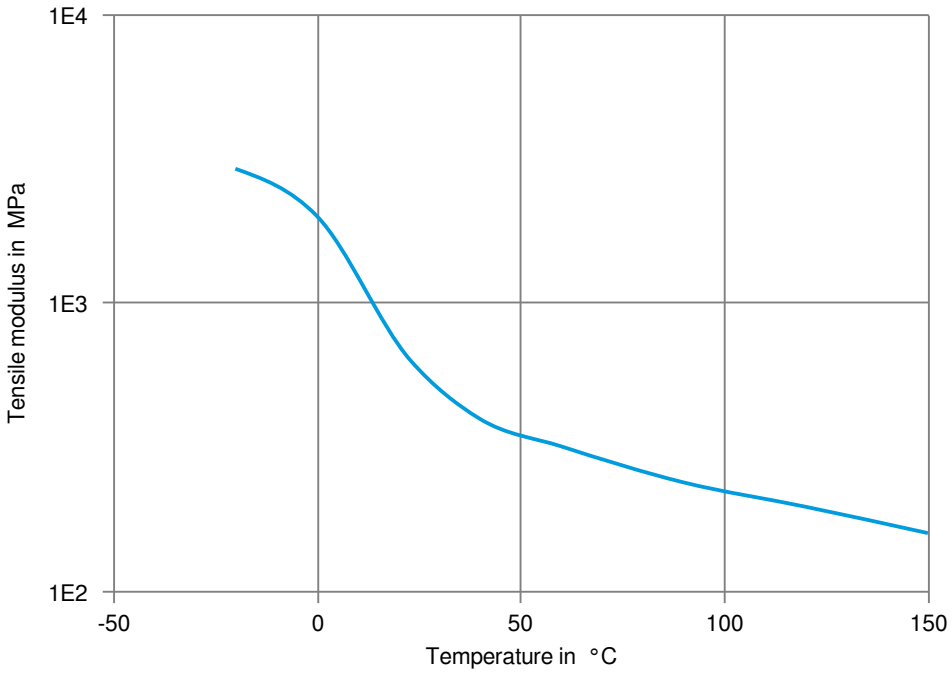
NYLON RESIN

Tensile modulus-temperature (cond.)



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Chemical Media Resistance

Alcohols

- ✔ Ethanol, 23 °C

Hydrocarbons

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

Mineral oils

- ✔ SAE 10W40 multigrade motor oil, 23 °C
- ✔ SAE 10W40 multigrade motor oil, 130 °C
- ✔ Motor oil OS206 304 Ref.Eng.Oil, ISP, 135 °C

Standard Fuels

- ✔ ISO 1817 Liquid 3 - M3E7, 60 °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: 2025-04-22 Source: Celanese Materials Database