Celanese
The chemistry inside innovation™

Zytel® PLS93G35DH1 BK549

ZYTEL® PLUS & XT 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® PLS93G35DH1 is a 35% glass fibre reinforced, SHIELD protected polyamide 6 for injection moulding. It provides exceptional welding resistance and excellent heat resistance.

Product information

Resin Identification	PA6-GF35	ISO 1043
Part Marking Code	>PA6-GF35<	ISO 11469
ISO designation	ISO 16396-PA6,GF35,M1CGHR,S14-120	

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	0.2 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.7 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	12000 / 6500	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	200 / 120	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	3.5 / 7	%	ISO 527-1/-2
Charpy impact strength, 23°C	100 / 90	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	80 / 80	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	15 / -	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	13 / -	kJ/m²	ISO 179/1eA
Poisson's ratio	0.33 / 0.35		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	224 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	70 / 15	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	205 / *	°C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	7 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	100 / *	E-6/K	ISO 11359-1/-2
Thermal conductivity of melt	0.28	W/(m K)	ISO 22007-2
Specific heat capacity of melt	2100	J/(kg K)	ISO 22007-4

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

Electrical properties

	dry/cond.		
Volume resistivity	>1E13 / 7E11	Ohm.m	IEC 62631-3-1
Surface resistivity	* / 6E13	Ohm	IEC 62631-3-2
Comparative tracking index	550 / -		IEC 60112

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	2 / *	%	Sim. to ISO 62
Density	1400 / -	kg/m³	ISO 1183
Density of melt	1240	kg/m³	

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	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	150	°C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Release agent
Special characteristics	Heat stabilised or stable to heat

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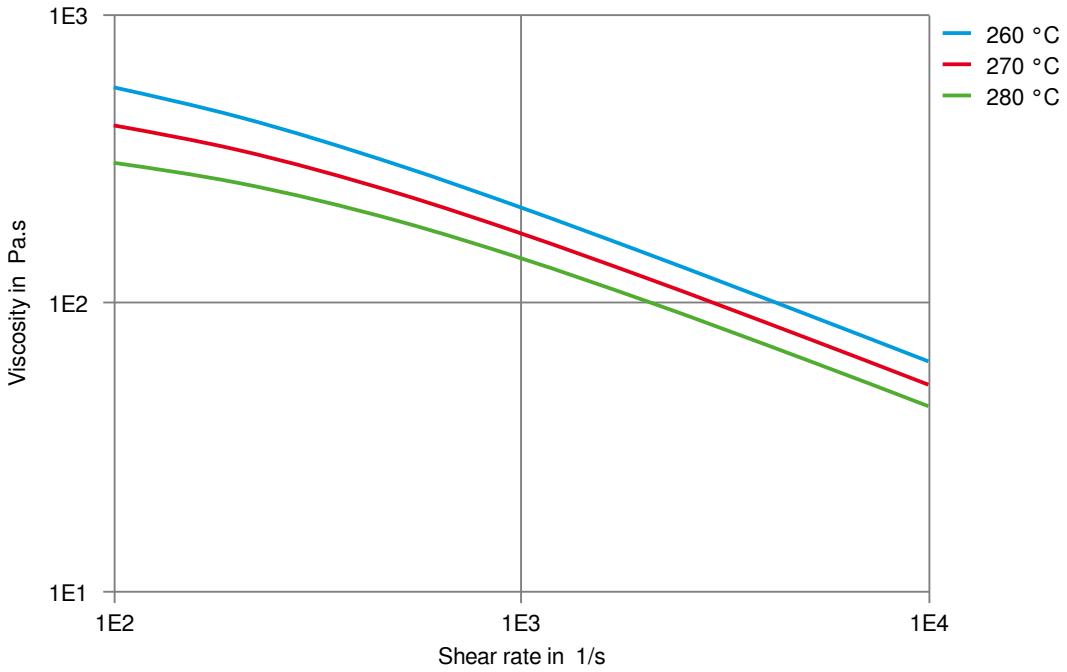
Viscosity-shear rate



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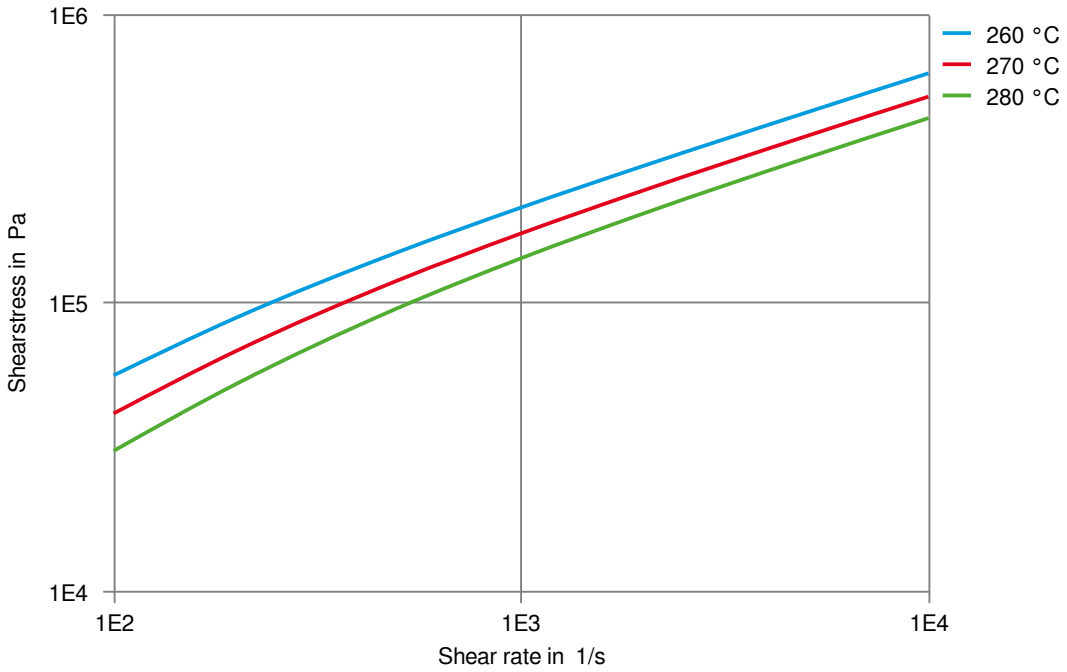
Shearstress-shear rate



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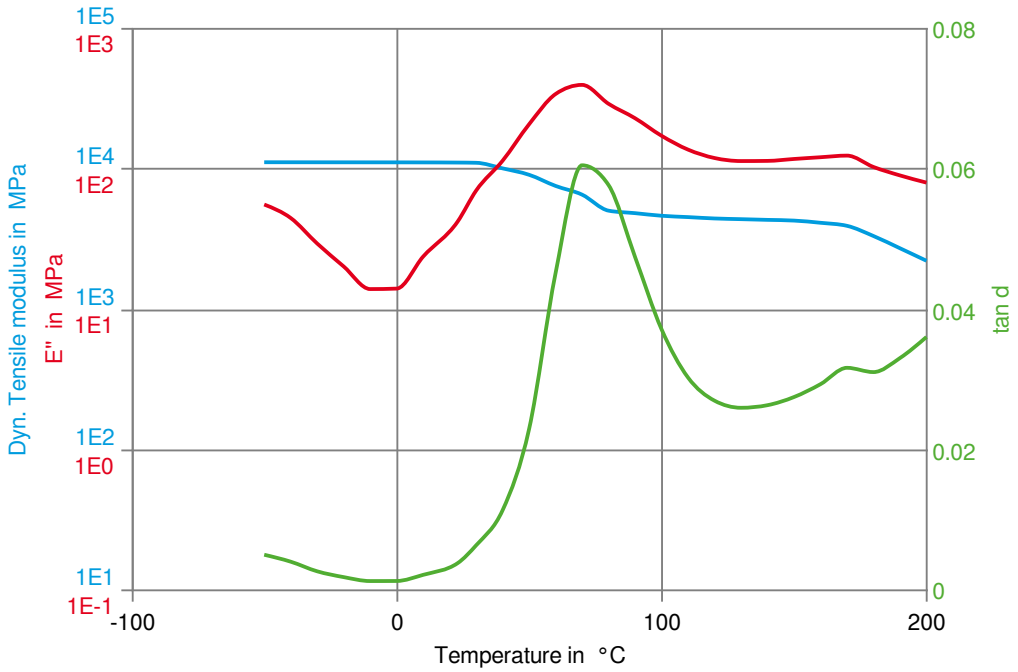
Dynamic Tensile modulus-temperature (dry)



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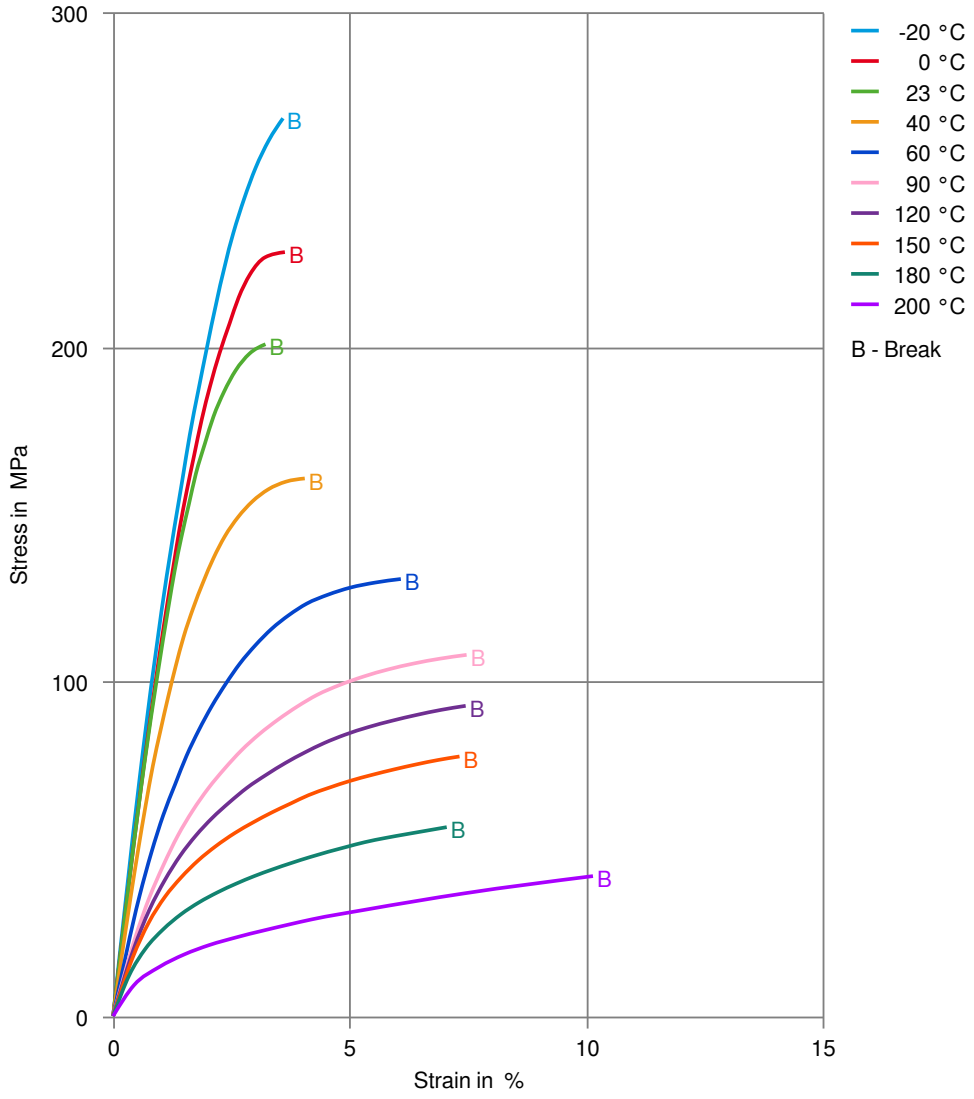
Stress-strain (dry)



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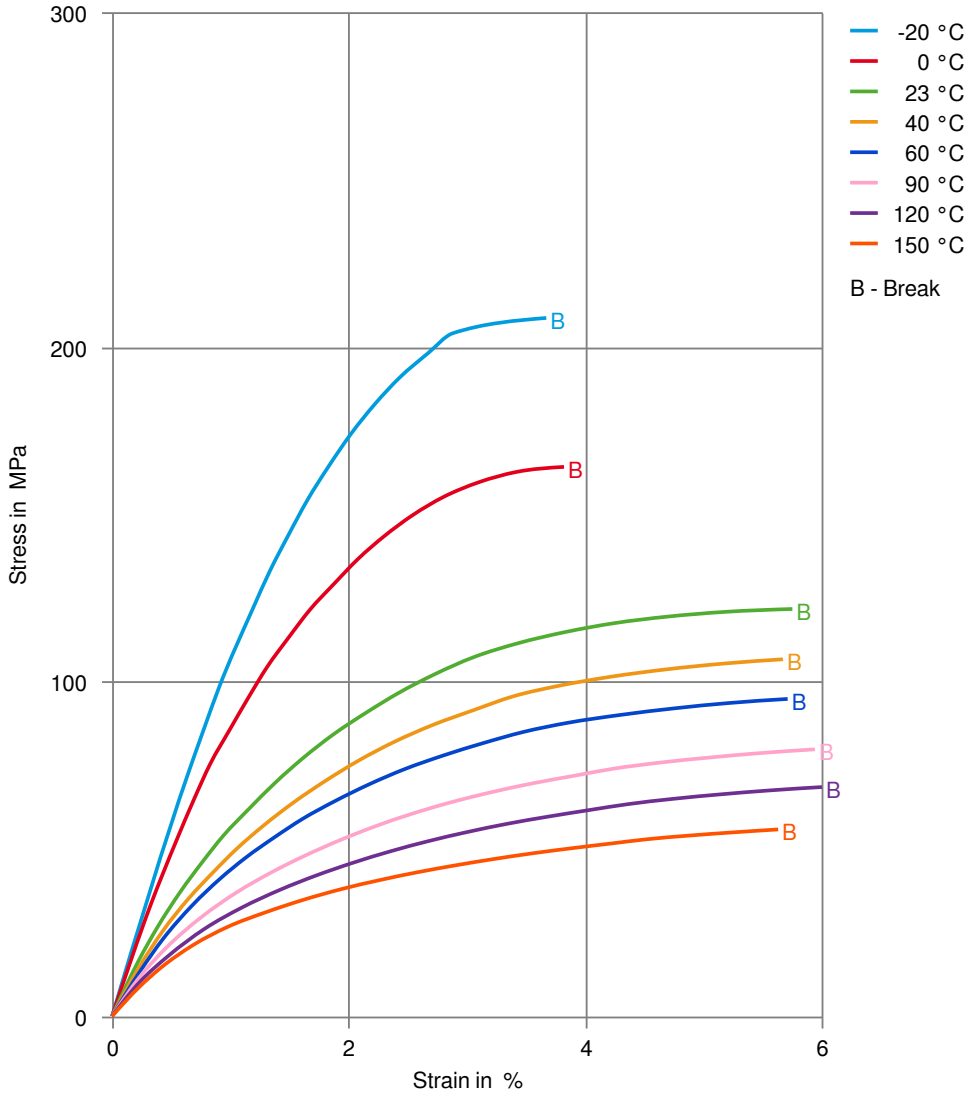
Stress-strain (cond.)



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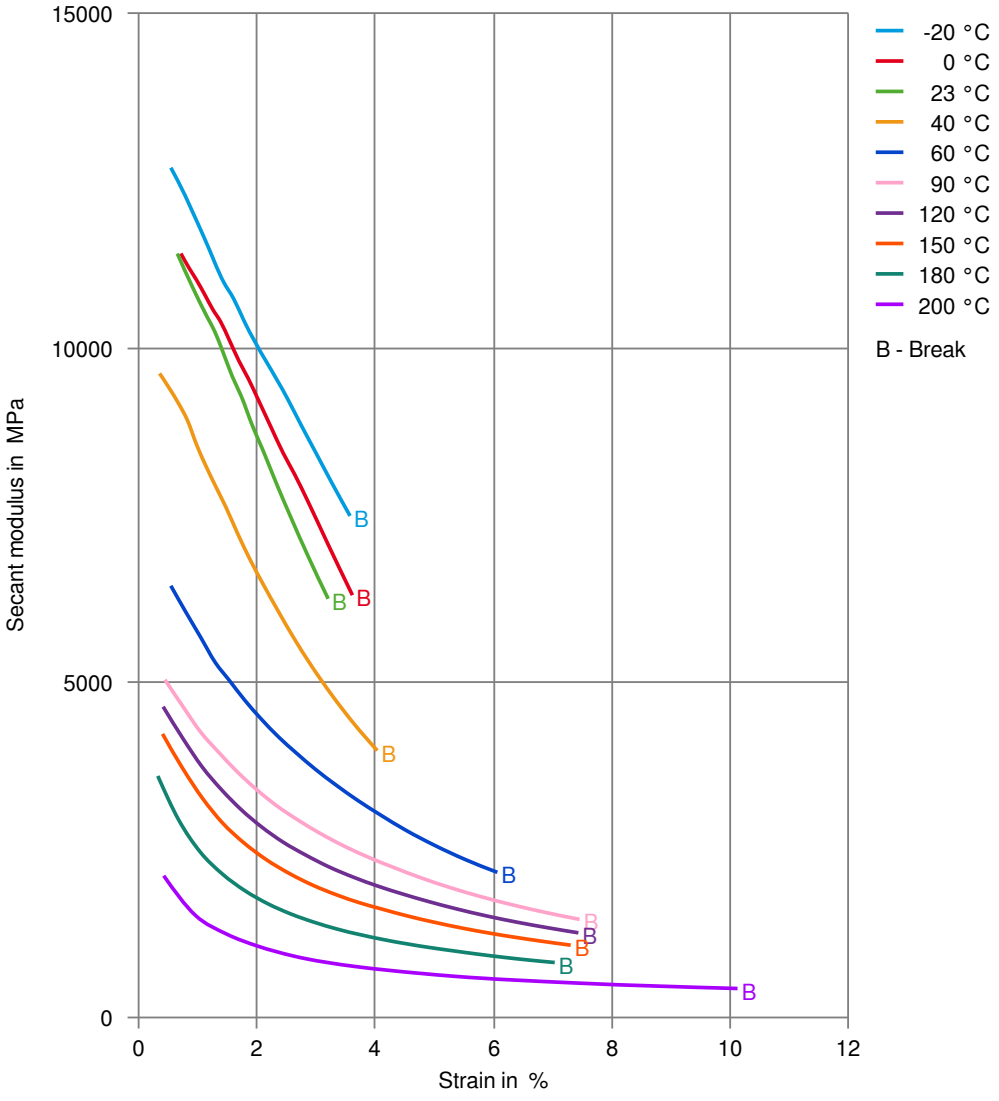
Secant modulus-strain (dry)



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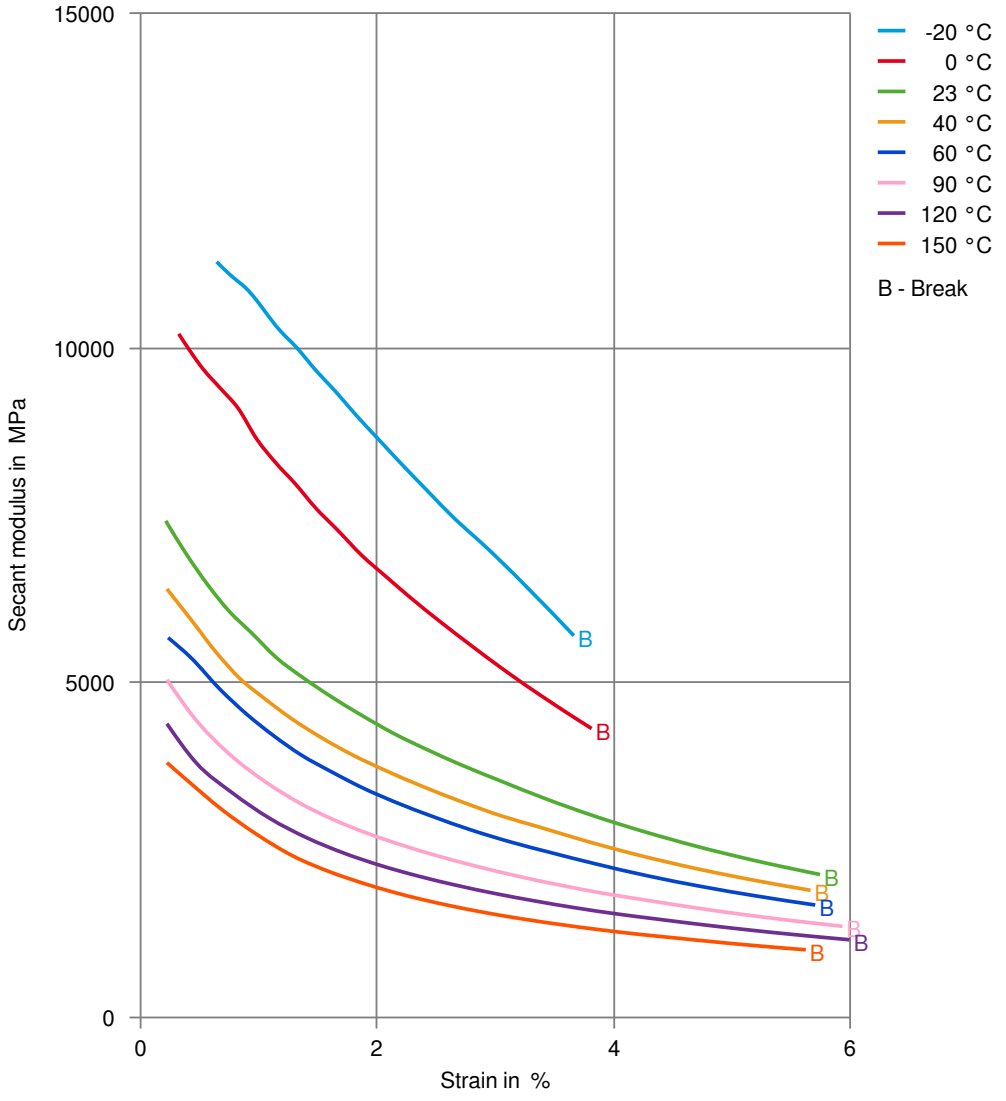
Secant modulus-strain (cond.)



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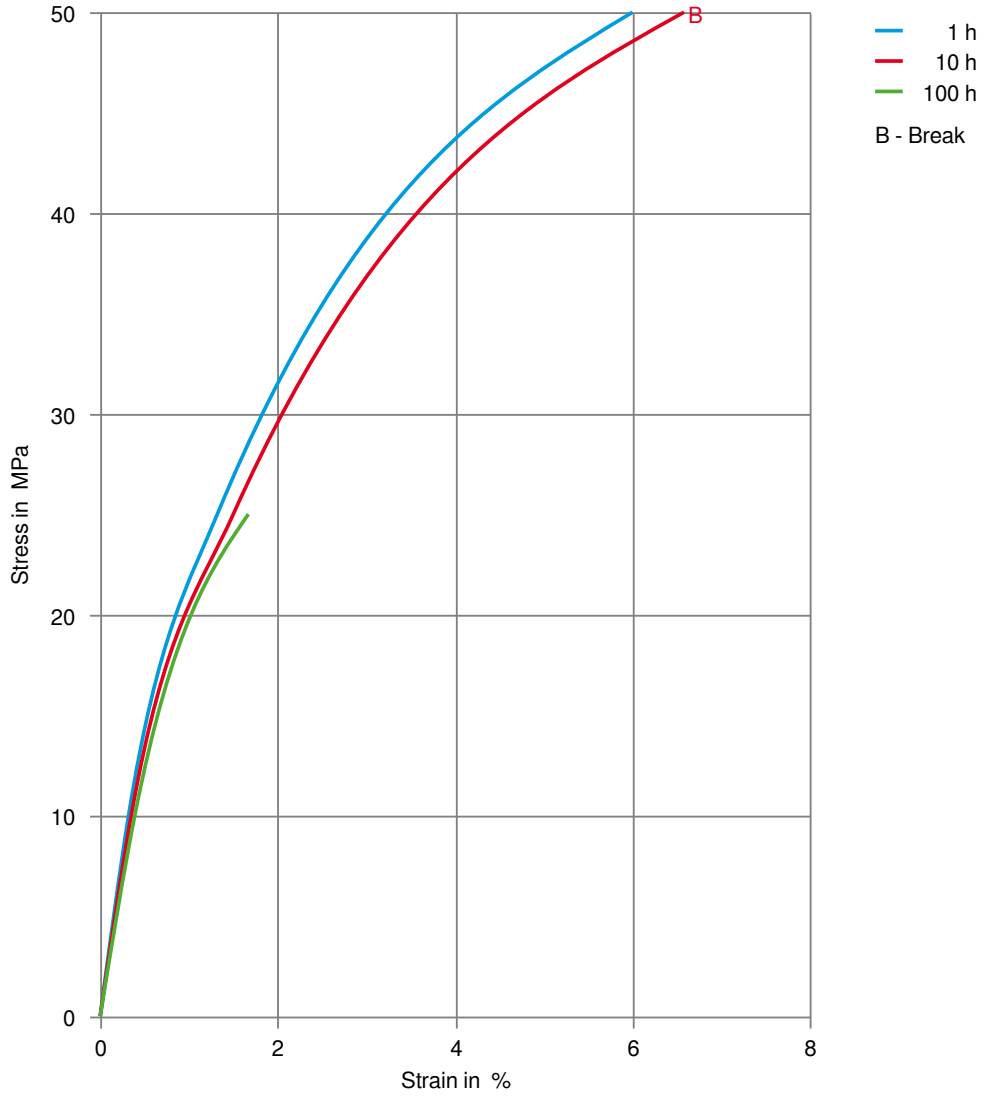
Stress-strain (isochronous) 180 °C (dry)



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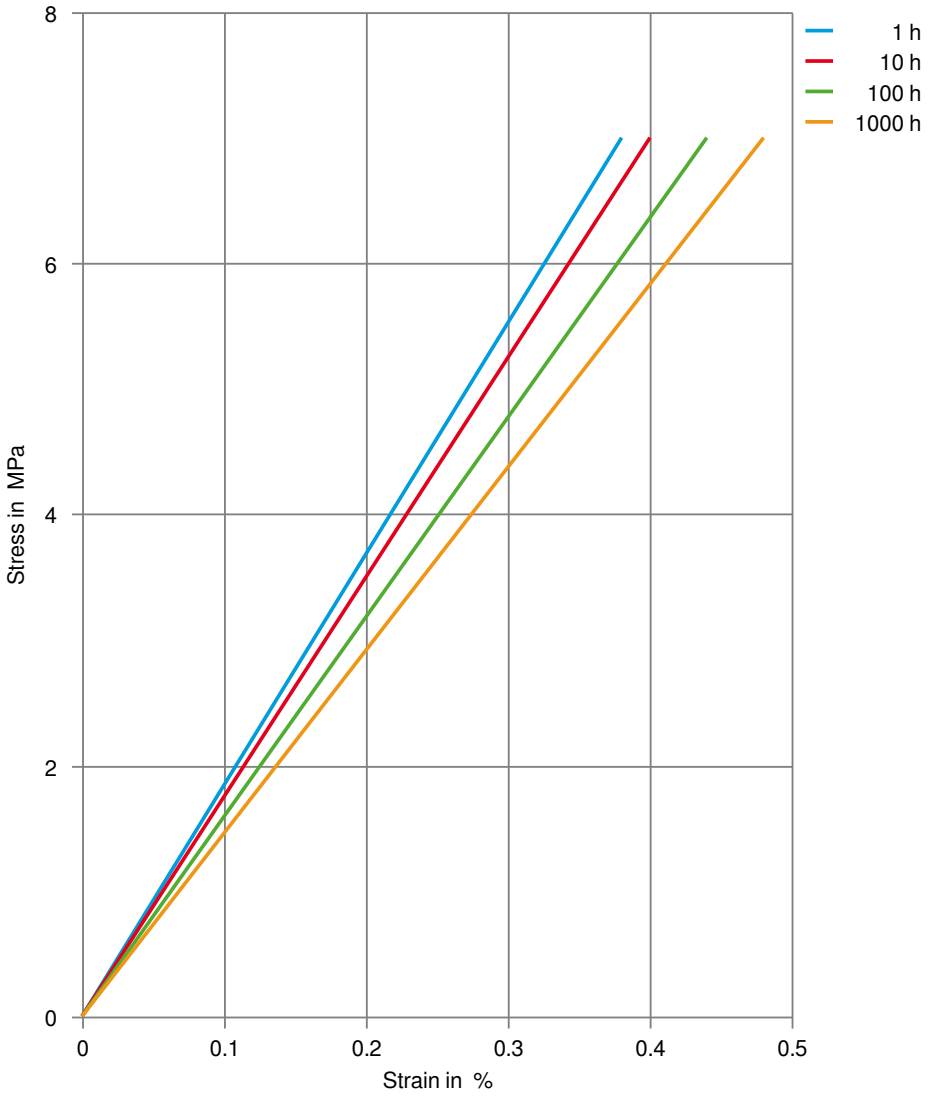
ZYTEL® PLUS & XT NYLON RESIN

Stress-strain (isochronous) 200 °C (dry)



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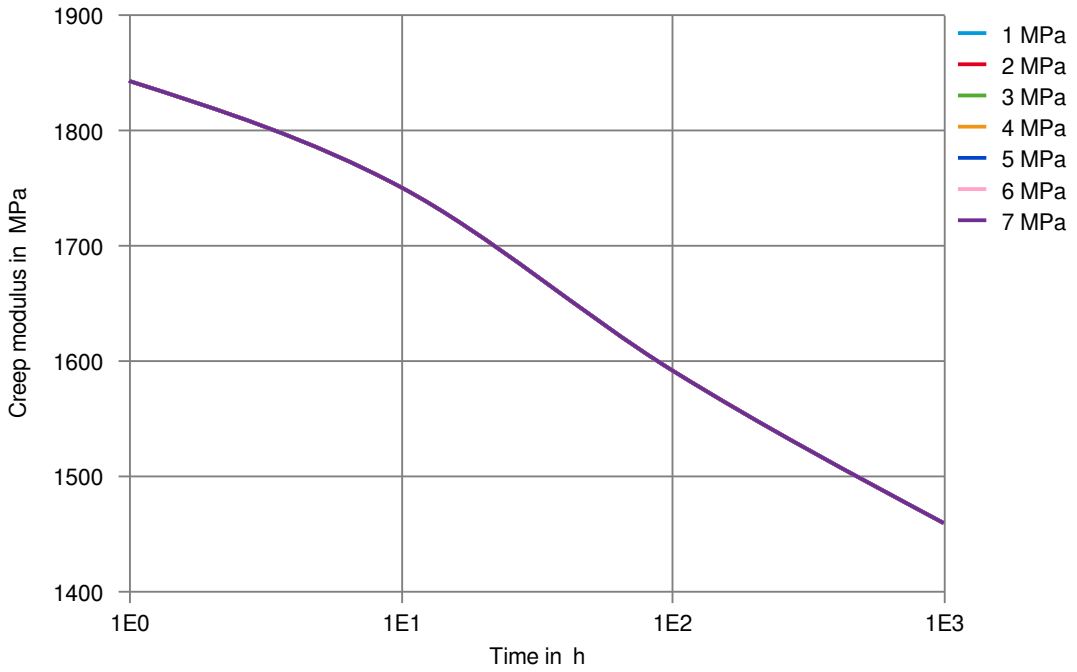
Creep modulus-time 200 °C (dry)



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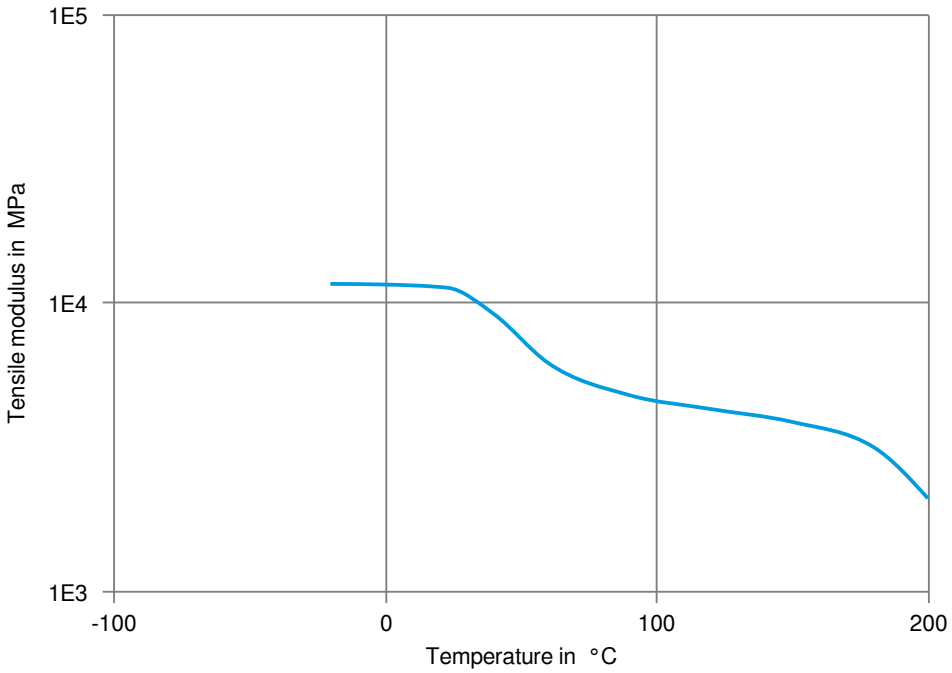
Tensile modulus-temperature (dry)



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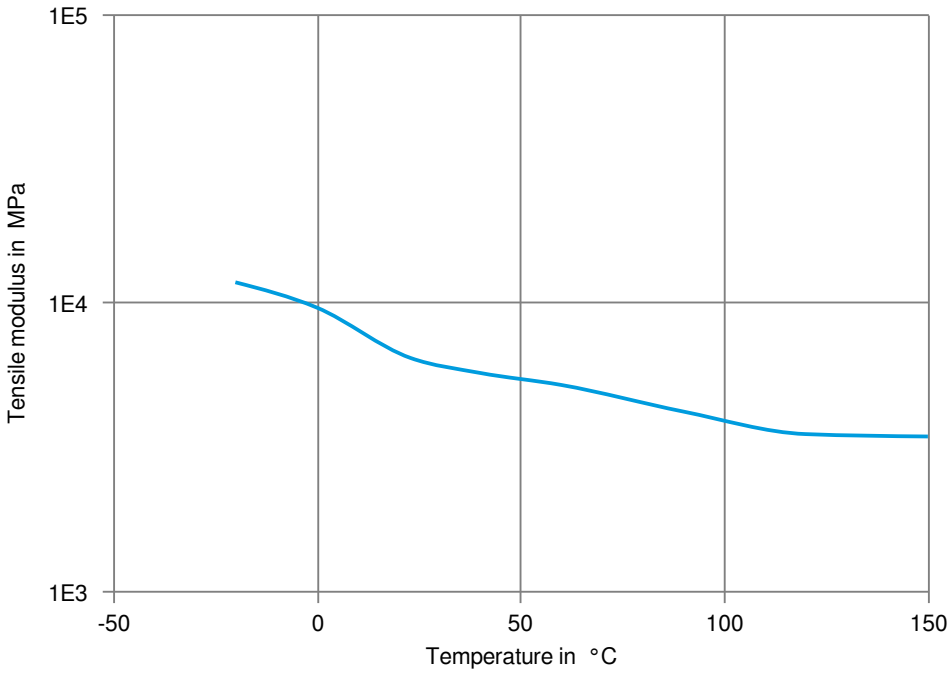
Tensile modulus-temperature (cond.)



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Mineral oils

Mineral oils

✔ SAE 10W40 multigrade motor oil, 130 °C

Other

✘ Water, 90 °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: 2025-04-23 Source: Celanese Materials Database