Celanese
The chemistry inside innovation™

Zytel® PLS95G35DH1 NC010

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® PLS95G35DH1 NC010 is a high flow, 35% glass fibre reinforced, SHIELD protected polyamide resin for injection moulding. It provides excellent surface appearance, excellent welding, excellent fatigue retention and exceptional resistance to hot air and hot oil.

Product information

Resin Identification	PA66/6T-GF35	ISO 1043
Part Marking Code	>PA66/6T-GF35<	ISO 11469
ISO designation	ISO 16396-PA66/6T,GF35,M1GHNR,S12-110	

Rheological properties

	dry/cond.		
Viscosity number	125 / *	cm^3/g	ISO 307, 1628
Moulding shrinkage, parallel	0.1 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.6 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	11000 / 8000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	205 / 148	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	3.1 / 5.4	%	ISO 527-1/-2
Flexural modulus	9800 / -	MPa	ISO 178
Flexural strength	320 / -	MPa	ISO 178
Charpy impact strength, 23°C	75 / 90	kJ/m^2	ISO 179/1eU
Charpy impact strength, -30°C	70 / 70[DS]	kJ/m^2	ISO 179/1eU
Charpy notched impact strength, 23°C	12 / 14	kJ/m^2	ISO 179/1eA
Charpy notched impact strength, -30°C	11 / -[DS]	kJ/m^2	ISO 179/1eA
Izod notched impact strength, 23°C	12 / 13	kJ/m^2	ISO 180/1A
Izod notched impact strength, -40°C	10.0 / -	kJ/m^2	ISO 180/1A
Izod impact strength, 23°C	65 / -	kJ/m^2	ISO 180/1U
Ball indentation hardness, H 961/30	285 / -	MPa	ISO 2039-1
Poisson's ratio	0.34 / 0.34		

[DS]: Derived from similar grade

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Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	269 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	80 / 40	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	245 / *	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	266 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	21 / *[DS]	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	12 / *[DS]	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	64 / *[DS]	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	140 / *[DS]	E-6/K	ISO 11359-1/-2

[DS]: Derived from similar grade

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	25	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Comparative tracking index	600 / -		IEC 60112

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.8 / *	%	Sim. to ISO 62
Water absorption, 2mm	6 / *	%	Sim. to ISO 62
Water absorption, Immersion 24h	1.1 / *	%	Sim. to ISO 62
Density	1430 / -	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	285	°C
Min. melt temperature	280	°C
Max. melt temperature	290	°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	210	°C

Characteristics

Processing	Injection Moulding
Delivery form	Pellets
Additives	Release agent

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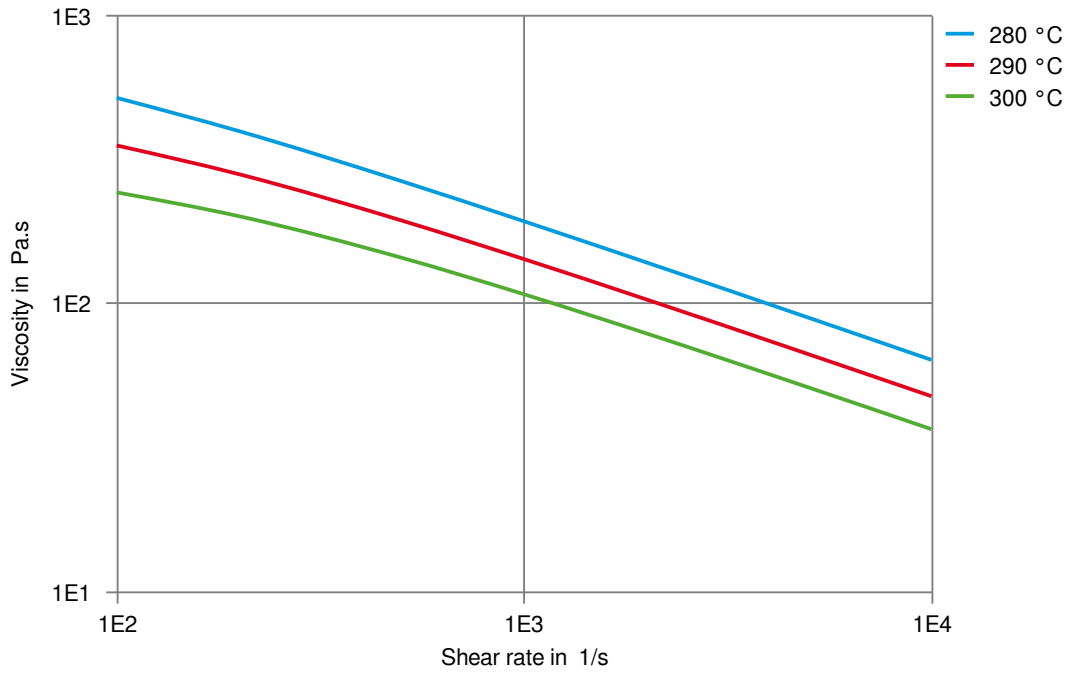
Special characteristics	Heat stabilised or stable to heat

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
General Motors	GMW17961P-PA-GF35-T3	Natural
VW Group	VW 50133 PA66-7-A	

Viscosity-shear rate
(measured on Zytel® PLS95G35DH1 BK549)



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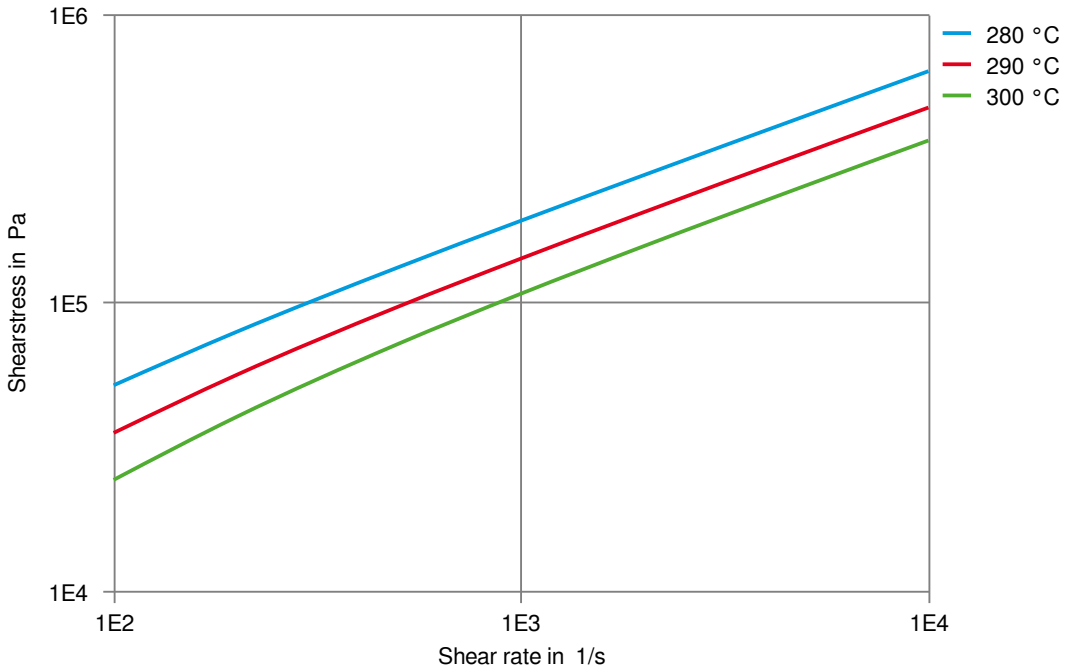
Shearstress-shear rate
(measured on Zytel® PLS95G35DH1 BK549)



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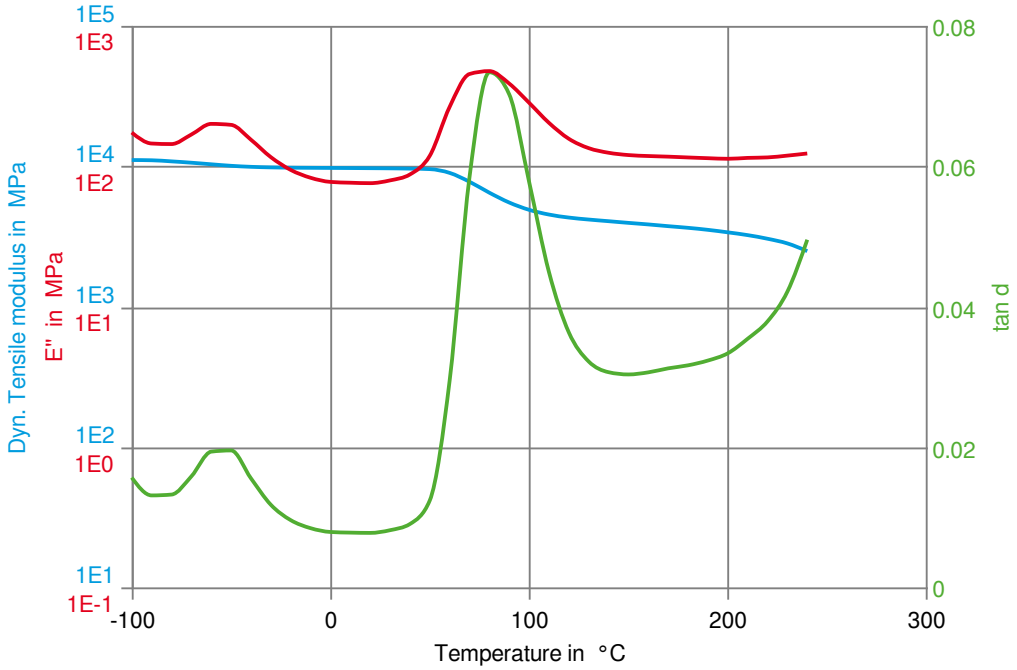
Dynamic Tensile modulus-temperature (dry)



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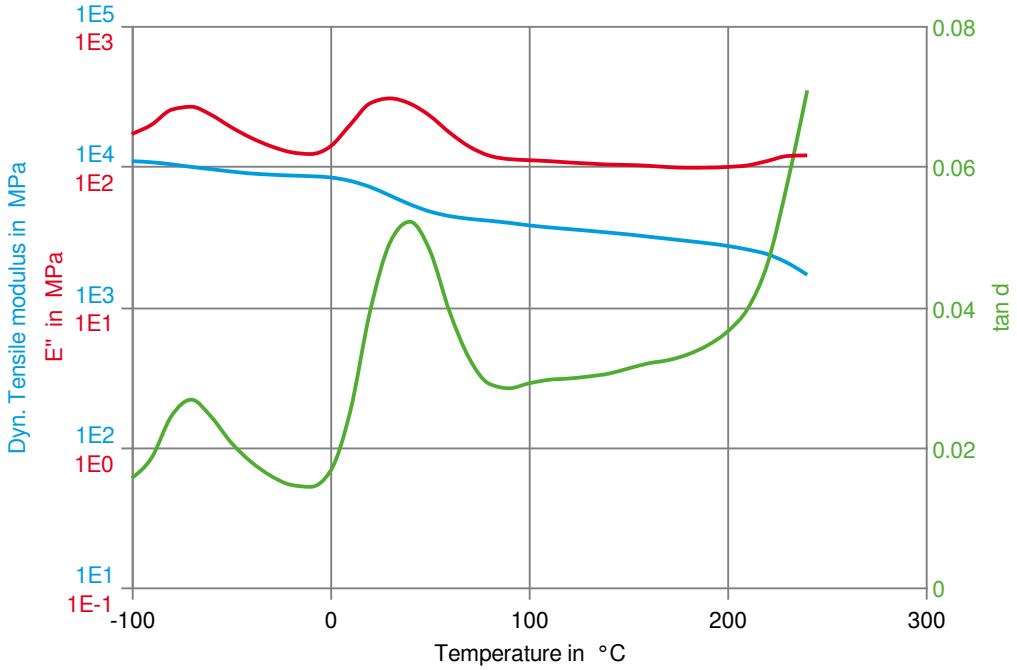
Dynamic Tensile modulus-temperature (cond.)



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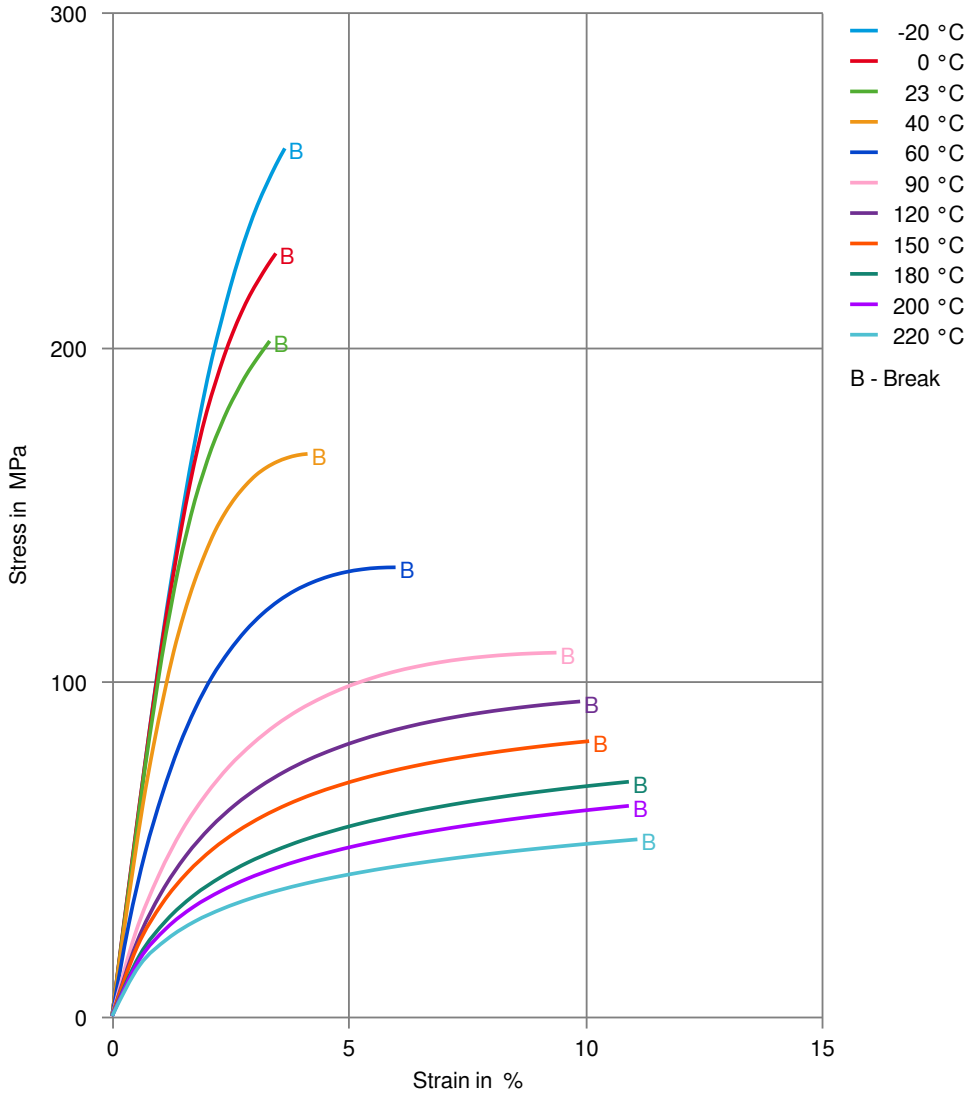
Stress-strain (dry)
(measured on Zytel® PLS95G35DH1 BK549)



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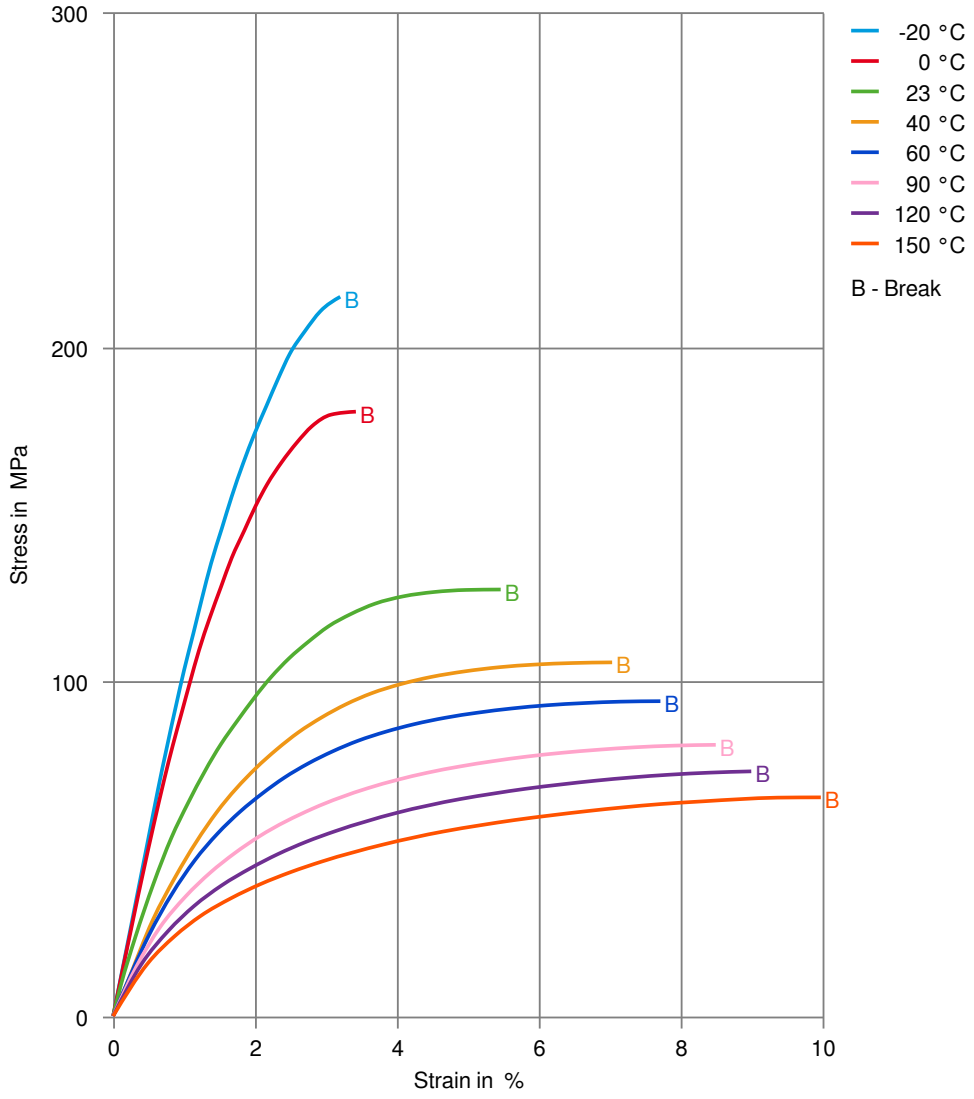
Stress-strain (cond.)
(measured on Zytel® PLS95G35DH1 BK549)



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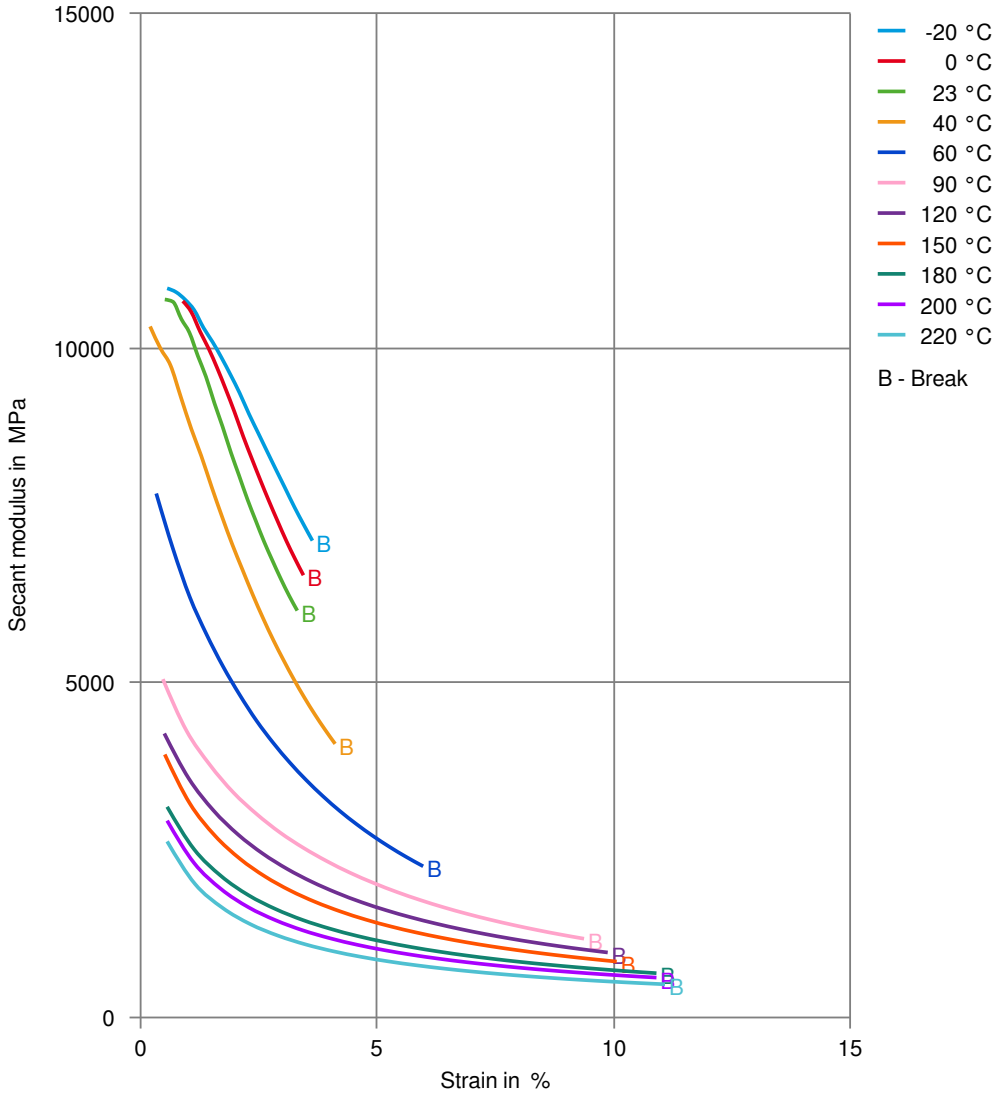
Secant modulus-strain (dry)
(measured on Zytel® PLS95G35DH1 BK549)



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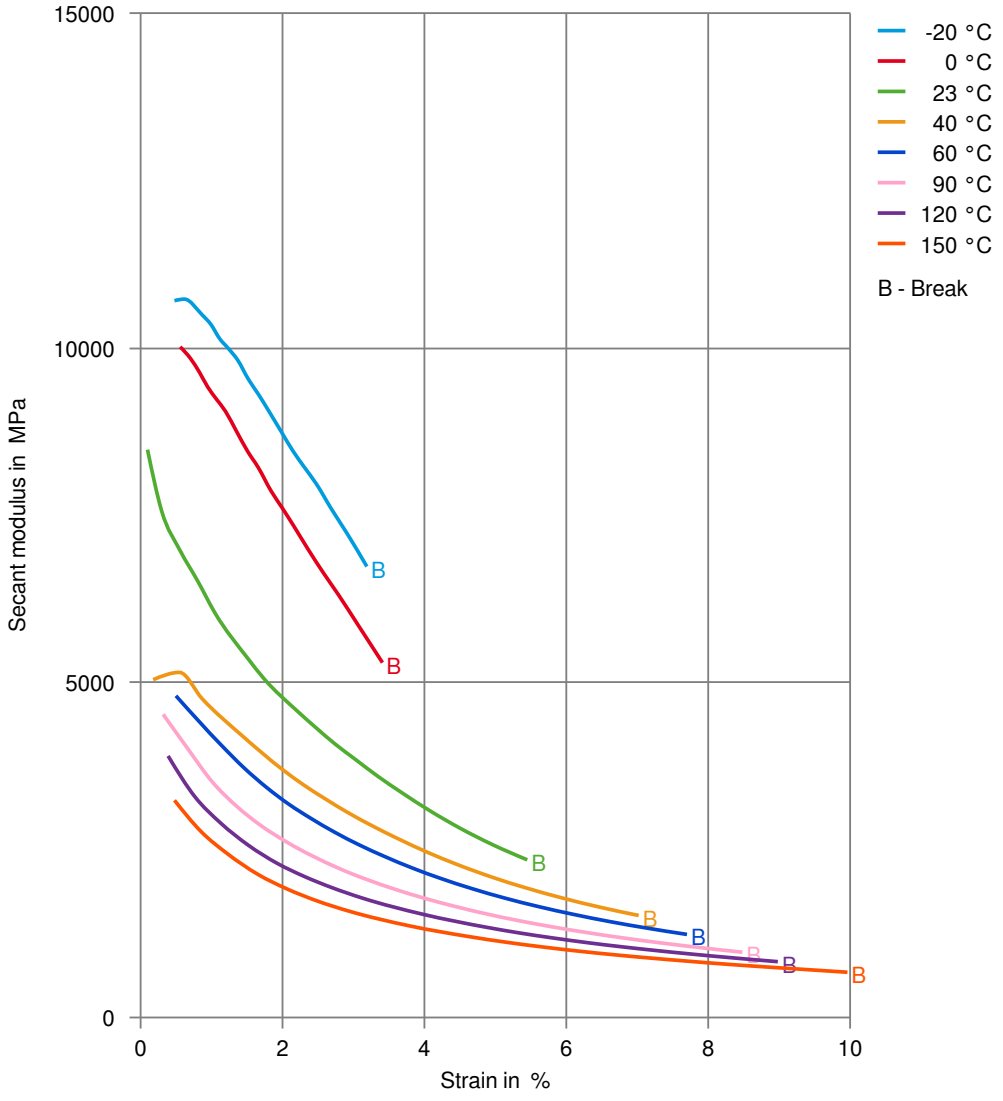
Secant modulus-strain (cond.)
(measured on Zytel® PLS95G35DH1 BK549)



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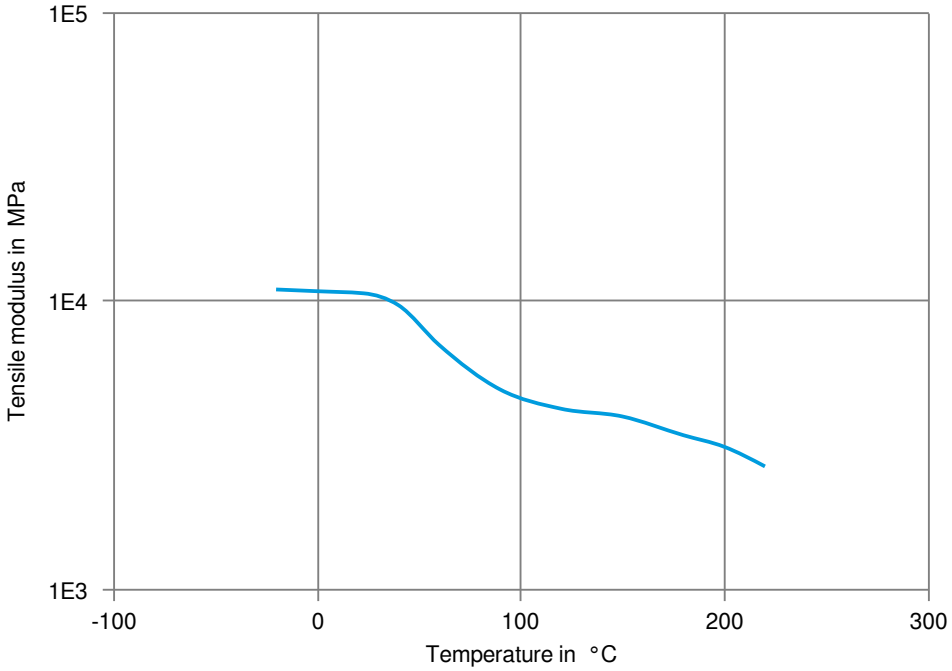
Tensile modulus-temperature (dry)
(measured on Zytel® PLS95G35DH1 BK549)



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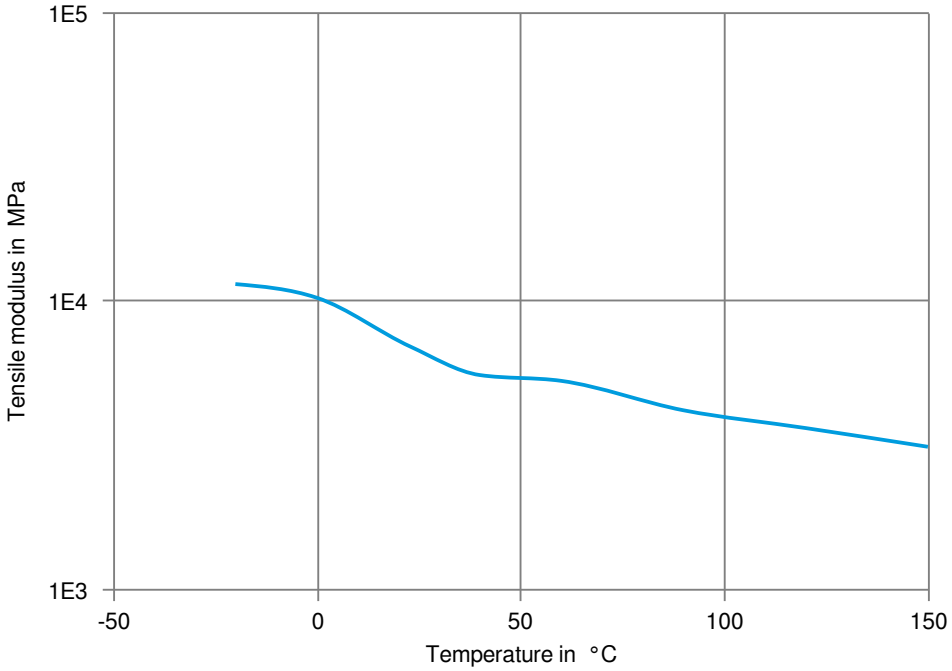
Tensile modulus-temperature (cond.)
(measured on Zytel® PLS95G35DH1 BK549)



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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

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).