

Zytel® PLS90G30DR BK099

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® PLS90G30DR BK099 is a 30% glass fiber reinforced PA66 resin having superior resistance to hot engine coolant. It is particularly suitable for automotive Radiator End Tanks and other parts in contact with engine coolant.

Product information

Resin Identification	PA66-GF30	ISO 1043
Part Marking Code	>PA66-GF30<	ISO 11469
ISO designation	ISO 16396-PA66,GF30,M1CGW,S14-090	

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	0.2/-	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.9/-	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	9500 / 7000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	190 / 140	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	3.5 / 5.8	%	ISO 527-1/-2
Flexural strength	280 / -	MPa	ISO 178
Charpy impact strength, 23°C	90 / 90	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	11 / 13	kJ/m ²	ISO 179/1eA
Poisson's ratio	0.34 / 0.35		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	263 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	65 / 20	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	252 / *	°C	ISO 75-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	15 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	100 / *	E-6/K	ISO 11359-1/-2

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)

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Electrical properties

	dry/cond.	
Comparative tracking index	-/575	IEC 60112

Physical/Other properties

	dry/cond.	
Humidity absorption, 2mm	1.9/*	% Sim. to ISO 62
Water absorption, 2mm	6/*	% Sim. to ISO 62
Density	1360/-	kg/m ³ 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	290 °C
Min. melt temperature	280 °C
Max. melt temperature	300 °C
Screw tangential speed	≤0.2 m/s
Mold Temperature Optimum	95 °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	211 °C

Characteristics

Processing	Injection Moulding
Special characteristics	Hydrolysis resistant

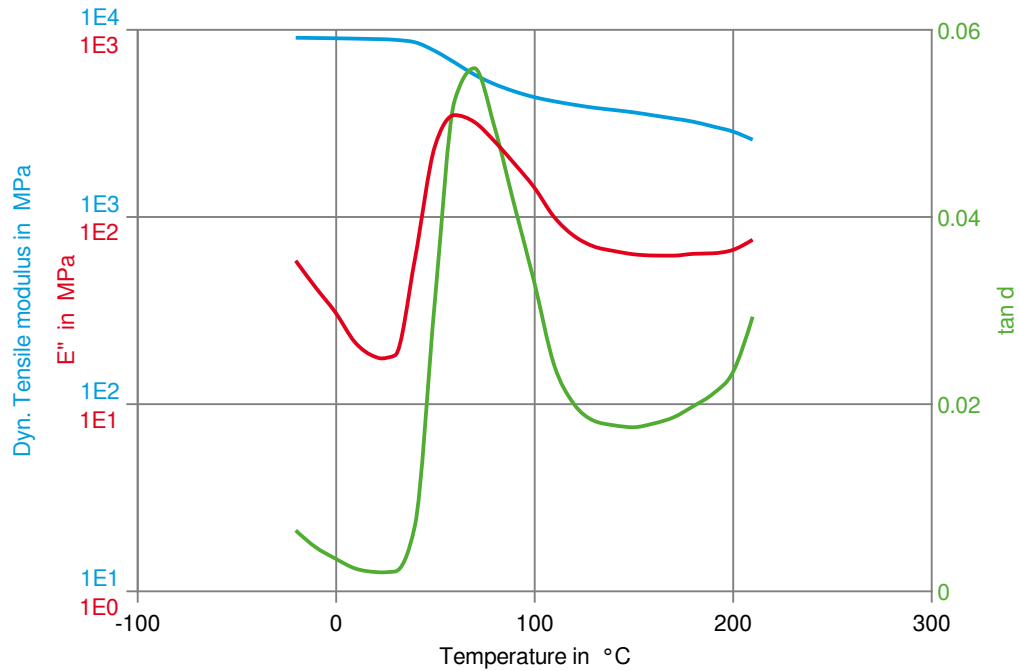
Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
BMW	GS93016-PA66-GF30	(Highly Hydrolysis/Heat Aging Resistant)

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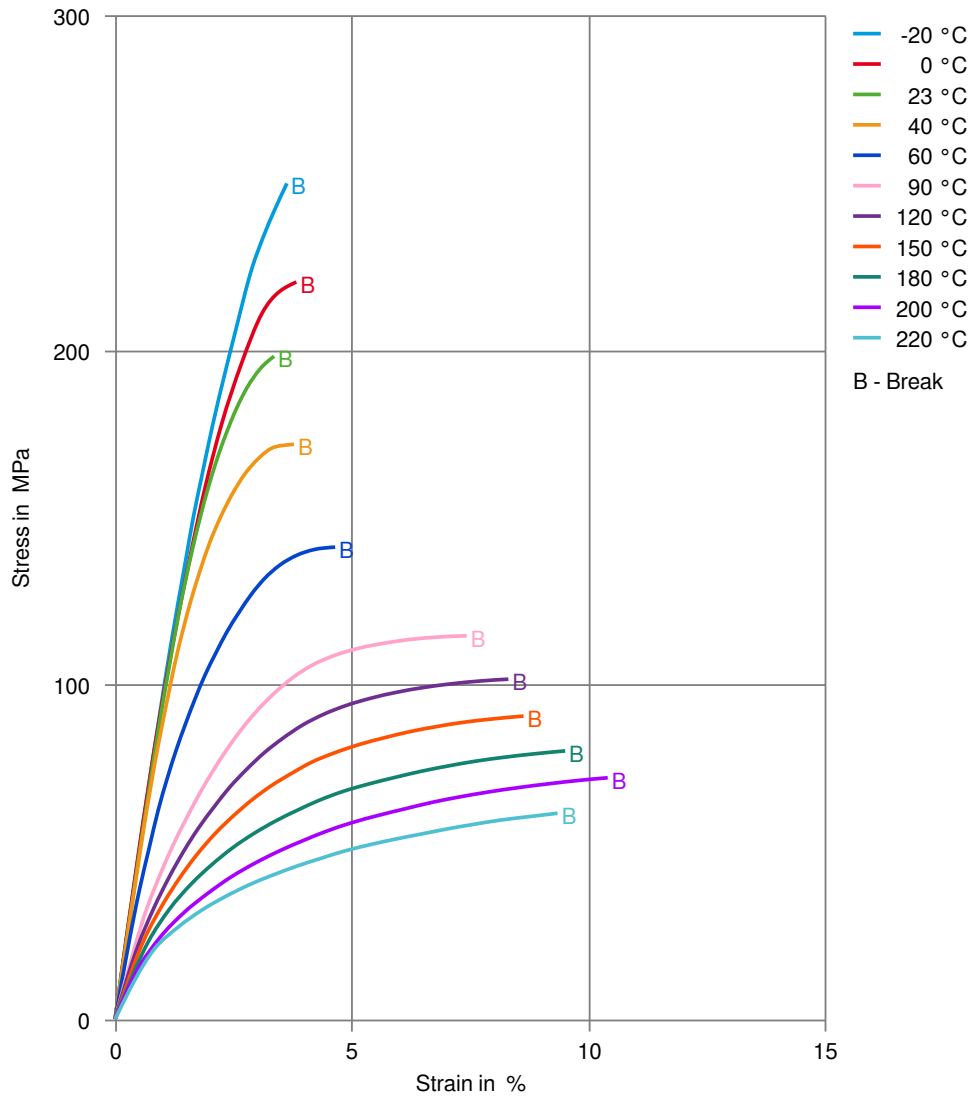
Dynamic Tensile modulus-temperature (dry)



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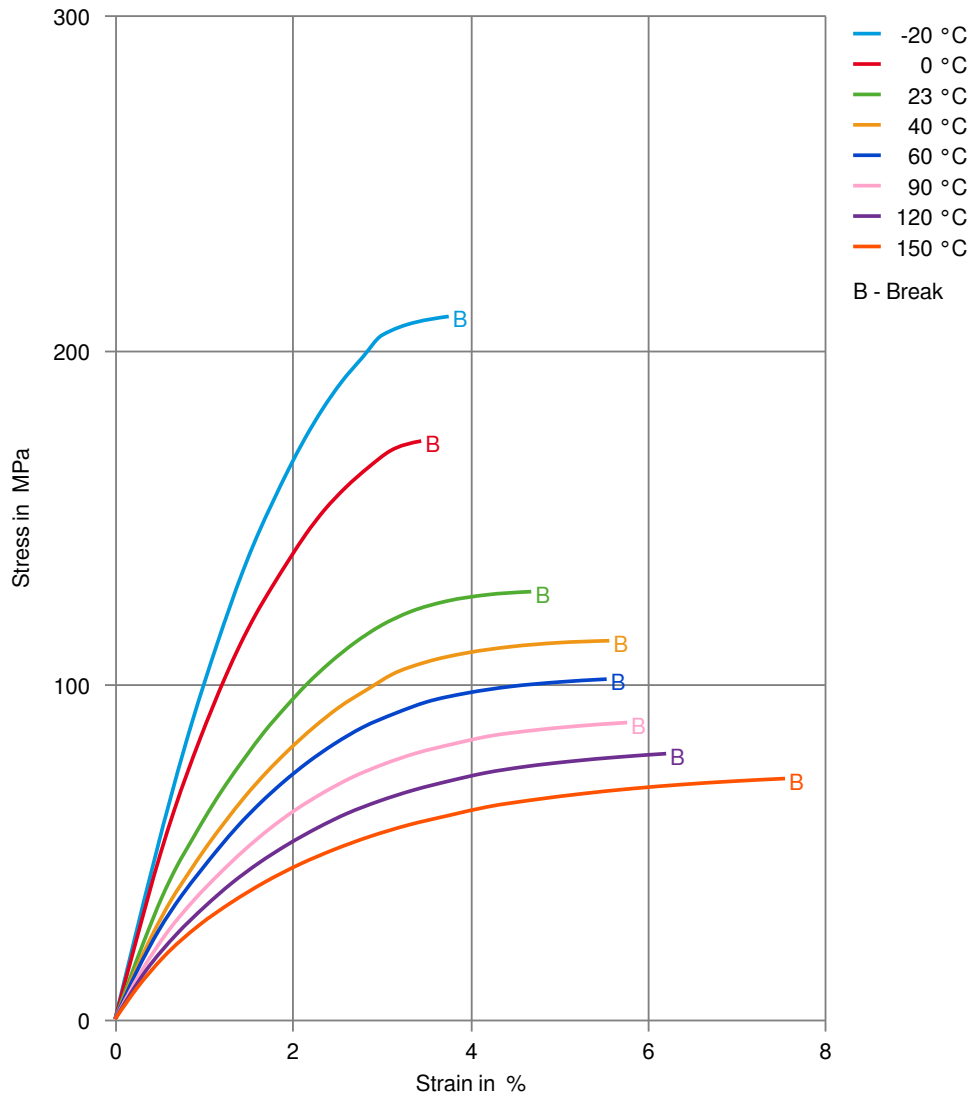
Stress-strain (dry)



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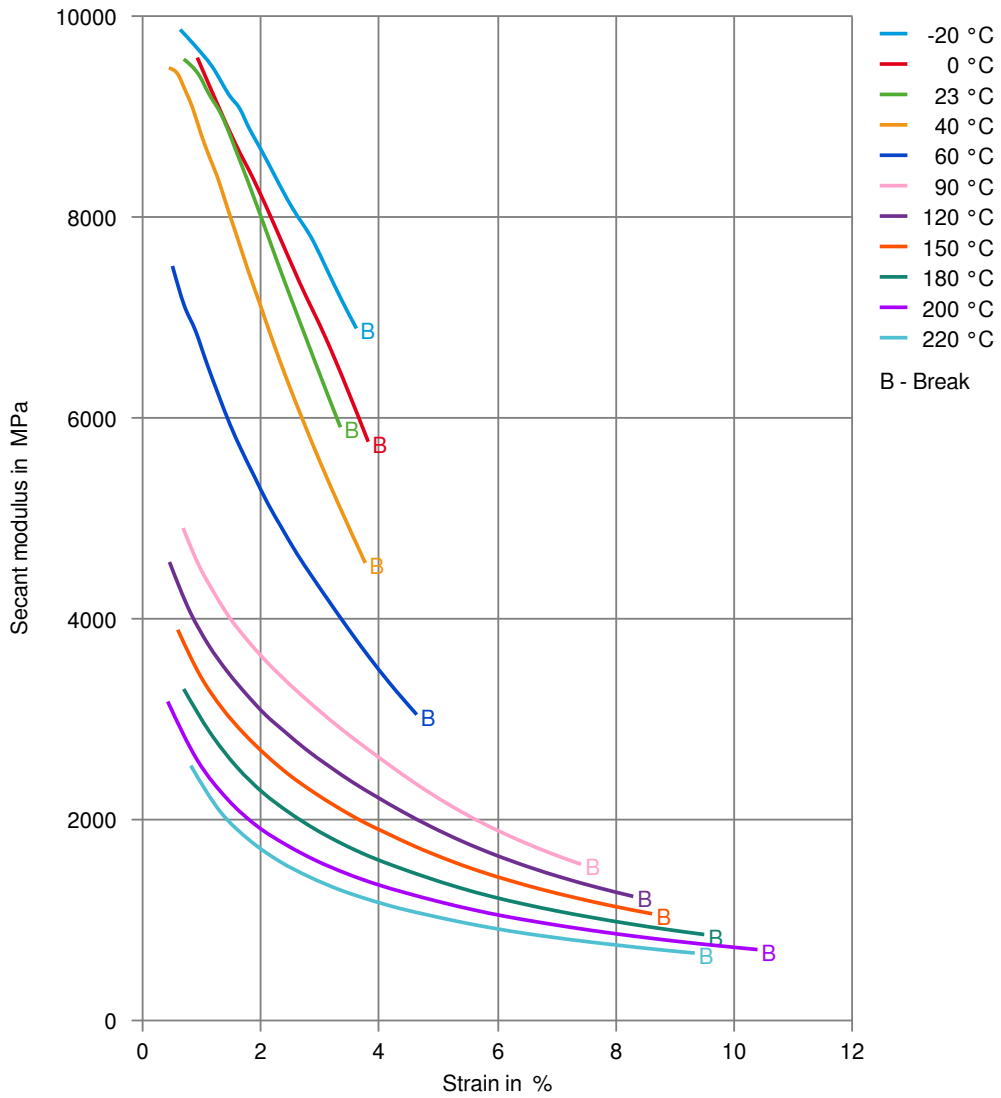
Stress-strain (cond.)



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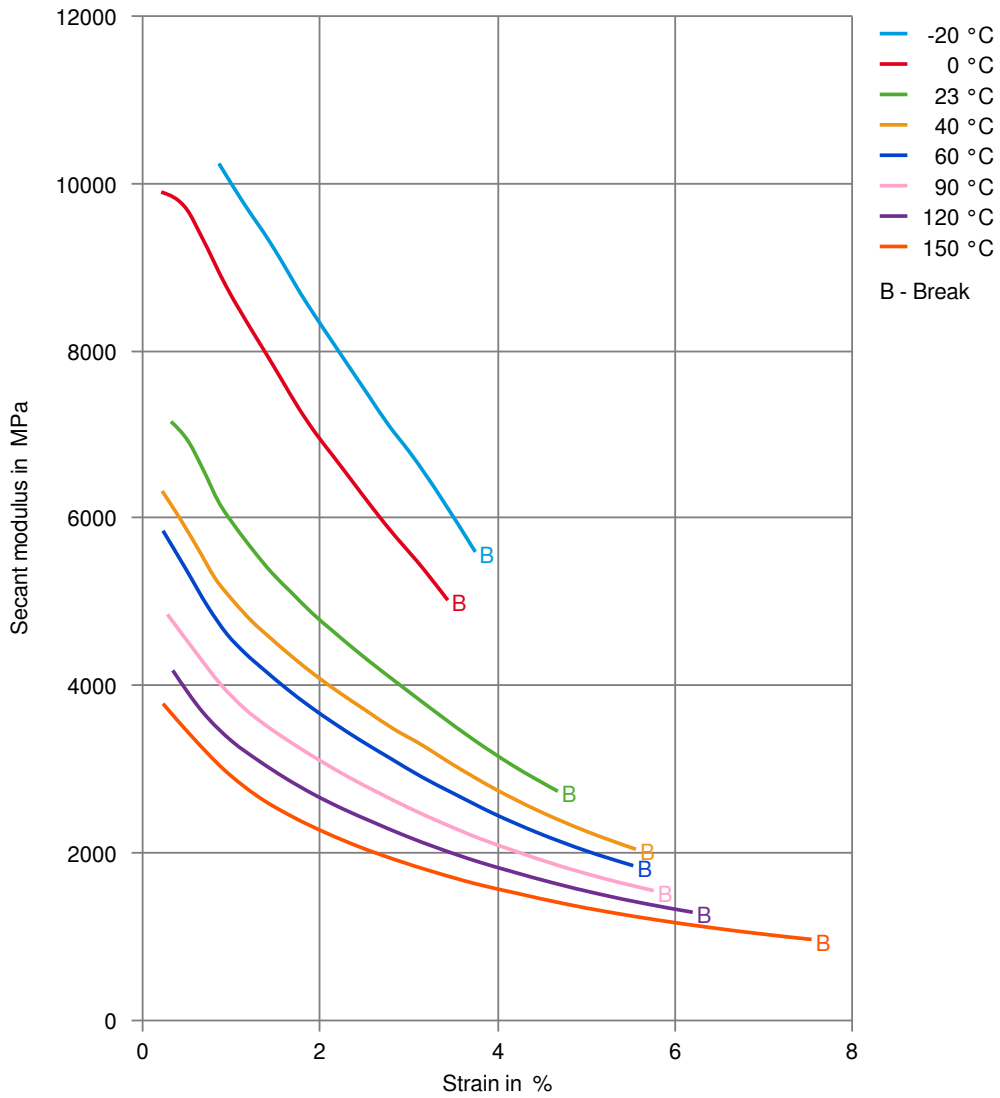
Secant modulus-strain (dry)



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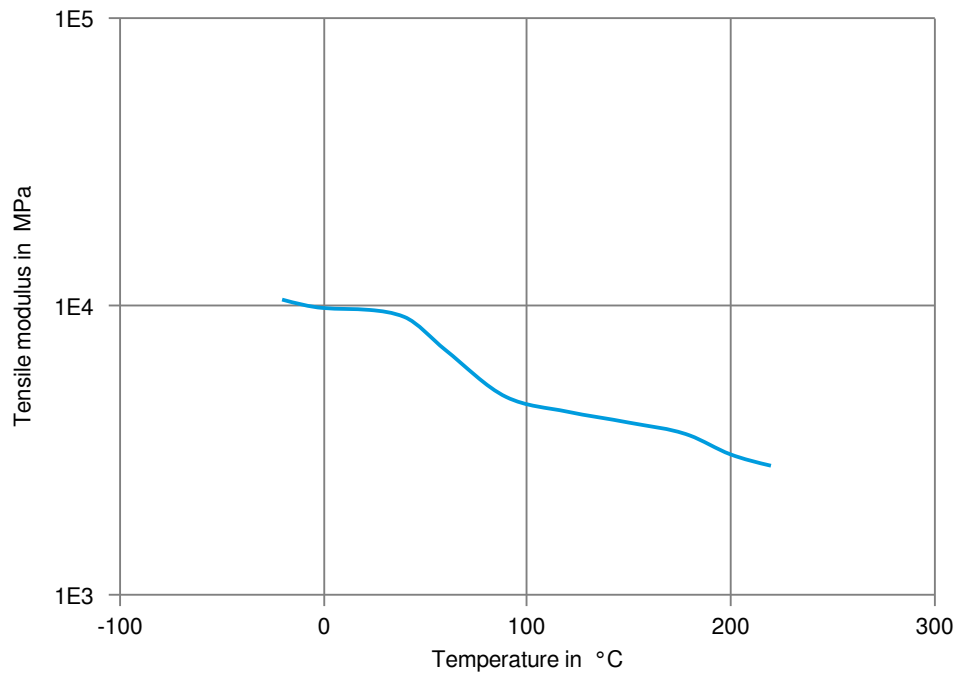
Secant modulus-strain (cond.)



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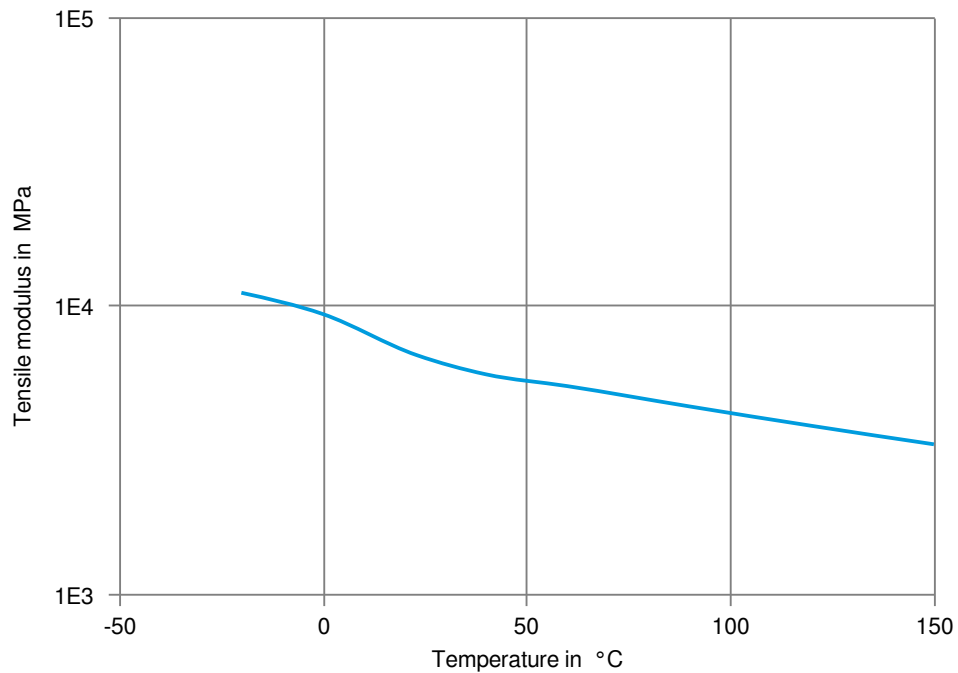
Tensile modulus-temperature (dry)



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Tensile modulus-temperature (cond.)



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Chemical Media Resistance

Other

- ✓ Ethylene Glycol (50% by mass) in water, 108°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).