

Zytel® PLS95G50DH2 BK261

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® PLS95G50DH2 BK261 is a high flow 50% glass reinforced PA nylon resin using our SHIELD Technology, providing exceptional Heat Resistance & High stiffness for automotive under hood applications like charge air cooler caps.

Product information

Resin Identification	PA66/6T-GF50	ISO 1043
Part Marking Code	>PA66/6T-GF50<	ISO 11469
ISO designation	ISO 16396-PA66/6T,GF50,M1CGHR,S12-160	

Rheological properties

	dry/cond.		
Viscosity number	125 ^[1] /*	cm ³ /g	ISO 307, 1628
Moulding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.6 / -	%	ISO 294-4, 2577
[1]: sulphuric acid 96%			

Typical mechanical properties

	dry/cond.		
Tensile modulus	17000 / 12000	MPa	ISO 527-1/-2
Tensile stress at break, 5mm/min	240 / 170	MPa	ISO 527-1/-2
Tensile strain at break, 5mm/min	2.6 / 4	%	ISO 527-1/-2
Flexural modulus	16000 / -	MPa	ISO 178
Flexural strength	370 / -	MPa	ISO 178
Tensile creep modulus, 1h	* / 10000	MPa	ISO 899-1
Tensile creep modulus, 1000h	* / 6500	MPa	ISO 899-1
Charpy impact strength, 23°C	90 / 95	kJ/m ²	ISO 179/1eU
Charpy impact strength, -30°C	80 / 80	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 23°C	15 / 20	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -30°C	16 / -	kJ/m ²	ISO 179/1eA
Poisson's ratio	0.33 / 0.33		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	267 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	65 / -	°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	263 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	15 / *	E-6/K	ISO 11359-1/-2

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Coefficient of linear thermal expansion (CLTE), parallel	14 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160 °C	5 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23 °C	56 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	67 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160 °C	120 / *	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	43	mm/min	ISO 3795 (FMVSS 302)

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.3 / *	%	Sim. to ISO 62
Water absorption, 2mm	4.5 / *	%	Sim. to ISO 62
Density	1590 / -	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	218 °C

Characteristics

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

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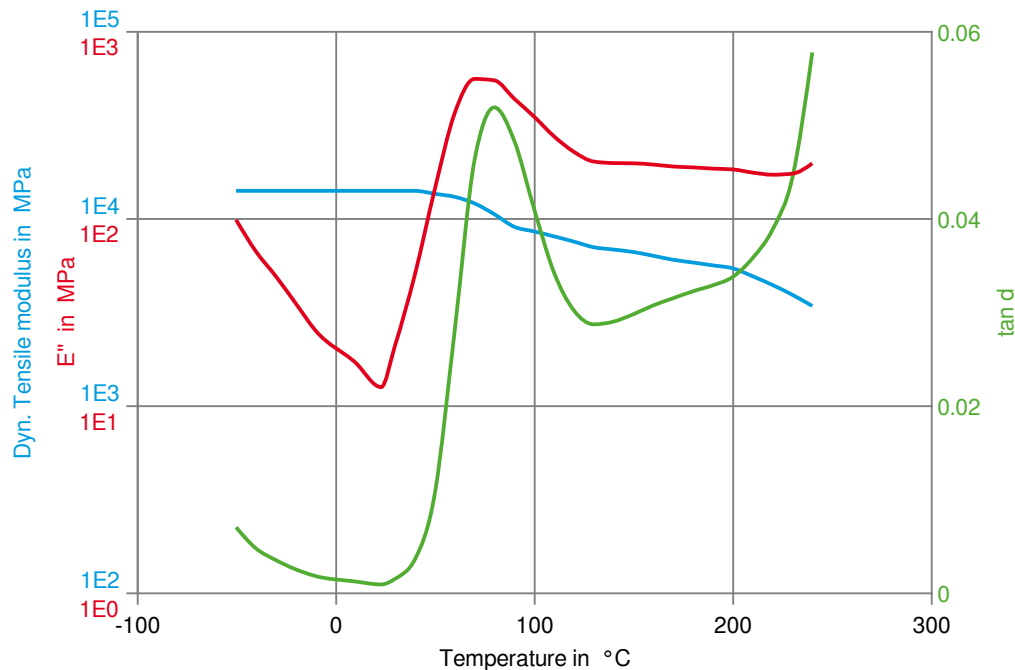
Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
General Motors	GMW17047P-PA-GF50	Black
Mercedes-Benz	DBL5408.55 (PA66+PA6) - GF50	
Mercedes-Benz	DBL5409.35 PA66 GF50	
Stellantis	B62 0300 / 61/222E/219M/H115	CPN5139;01378_21_02459
Stellantis - Chrysler	MS.50017 / CPN-5139	Black
VW Group	VW 50133 PA66-8-A	
VW Group	VW 50133 PA66-8-A	
Valeo	PDTNVC15006 RevE	PA66/6T-GF50 Class 5A
Valeo	PDTNVC15006 RevE	PA66/6T-GF50 Class 6
Valeo	PDTNVC15006 RevE	PA66/6T-GF50 Class 5B

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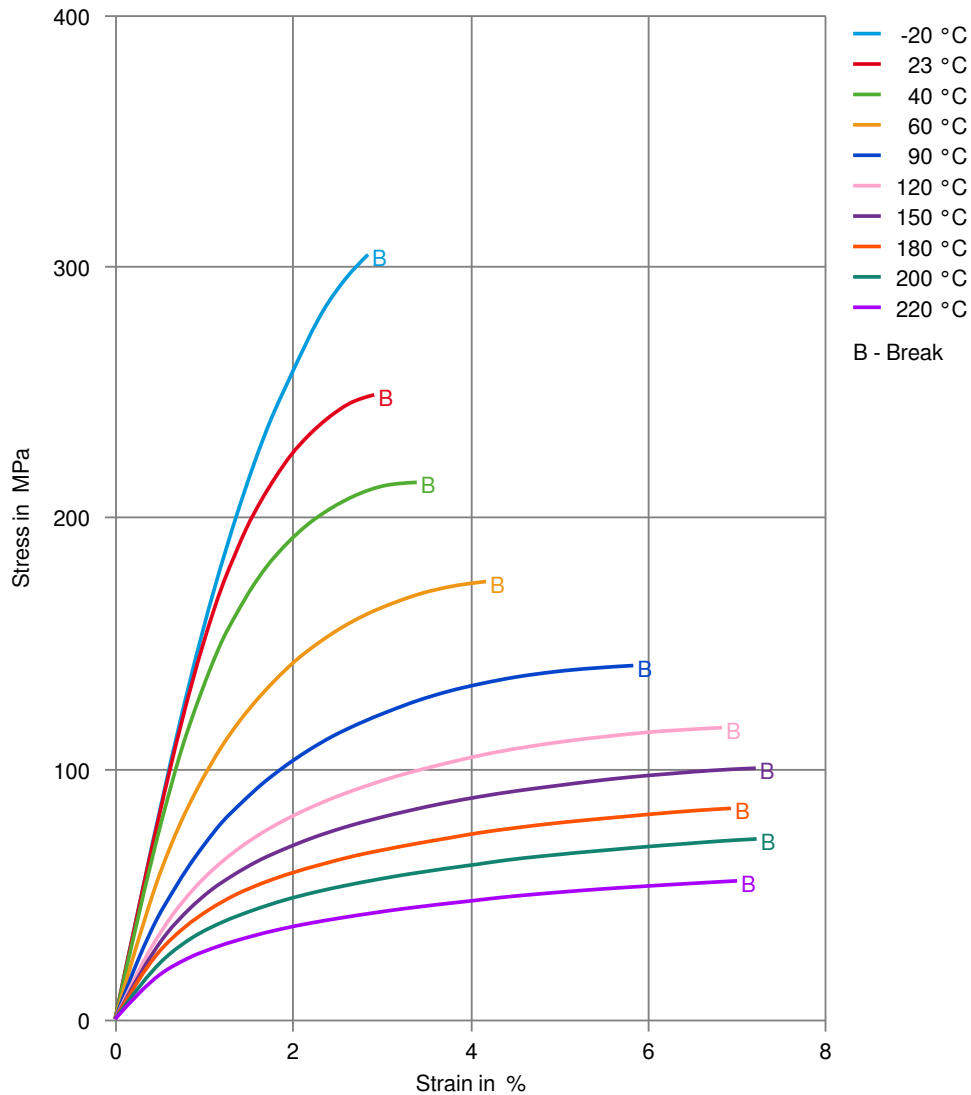
Dynamic Tensile modulus-temperature (dry)



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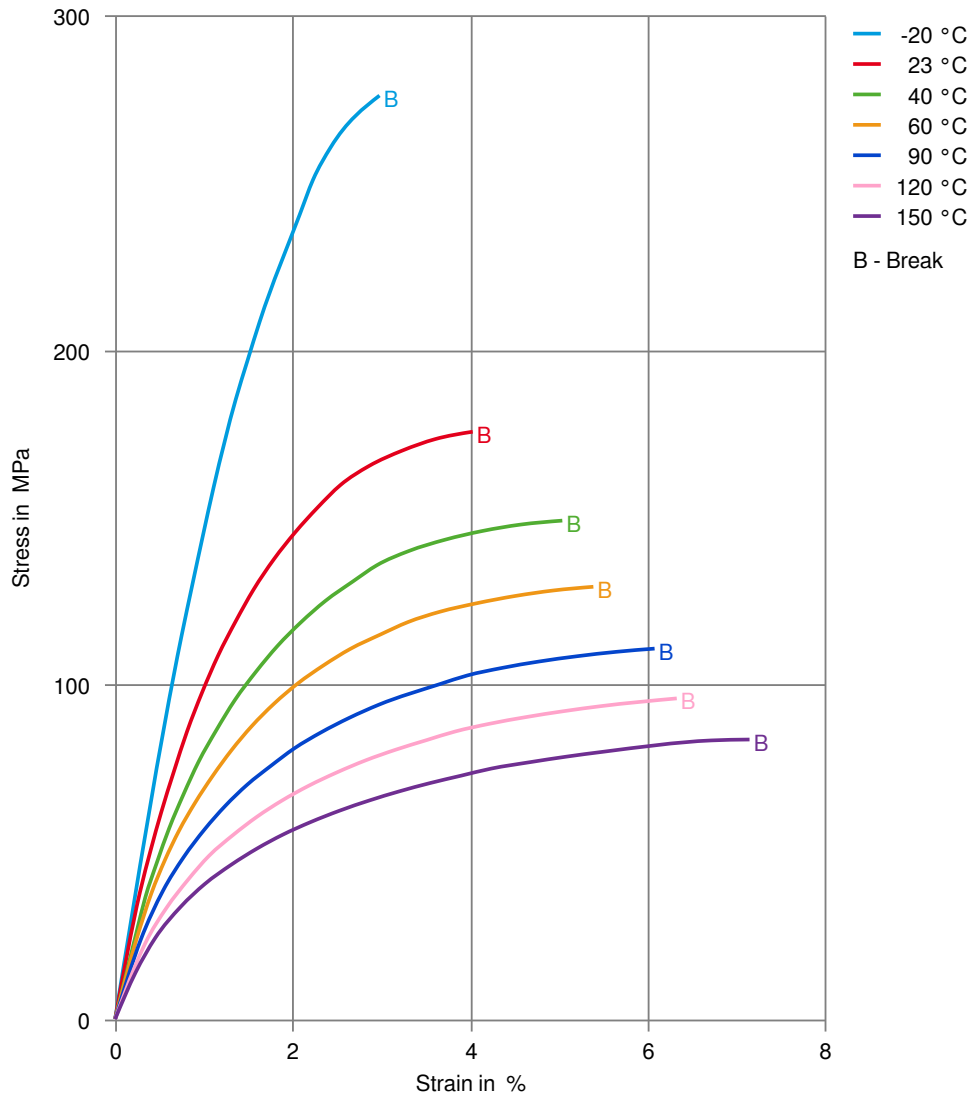
Stress-strain (dry)



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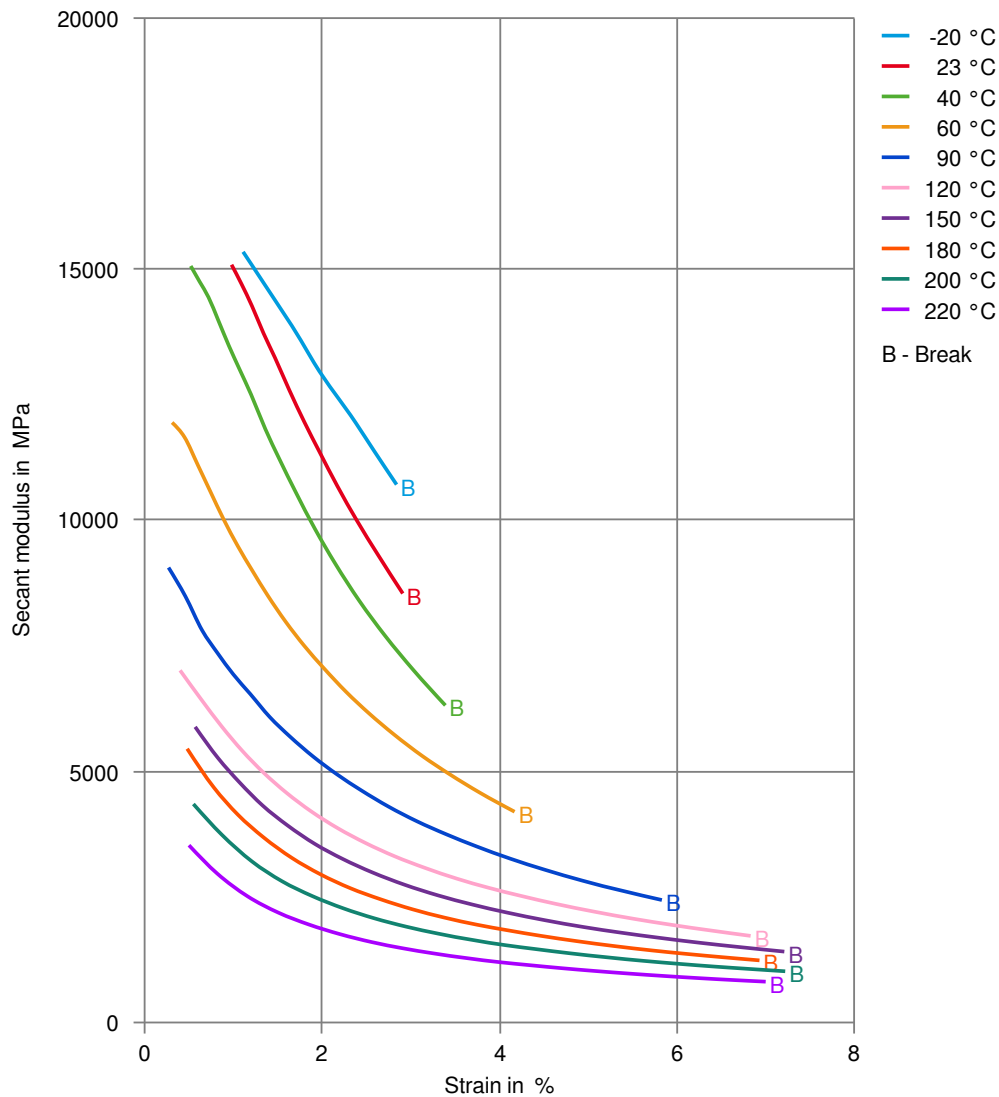
Stress-strain (cond.)



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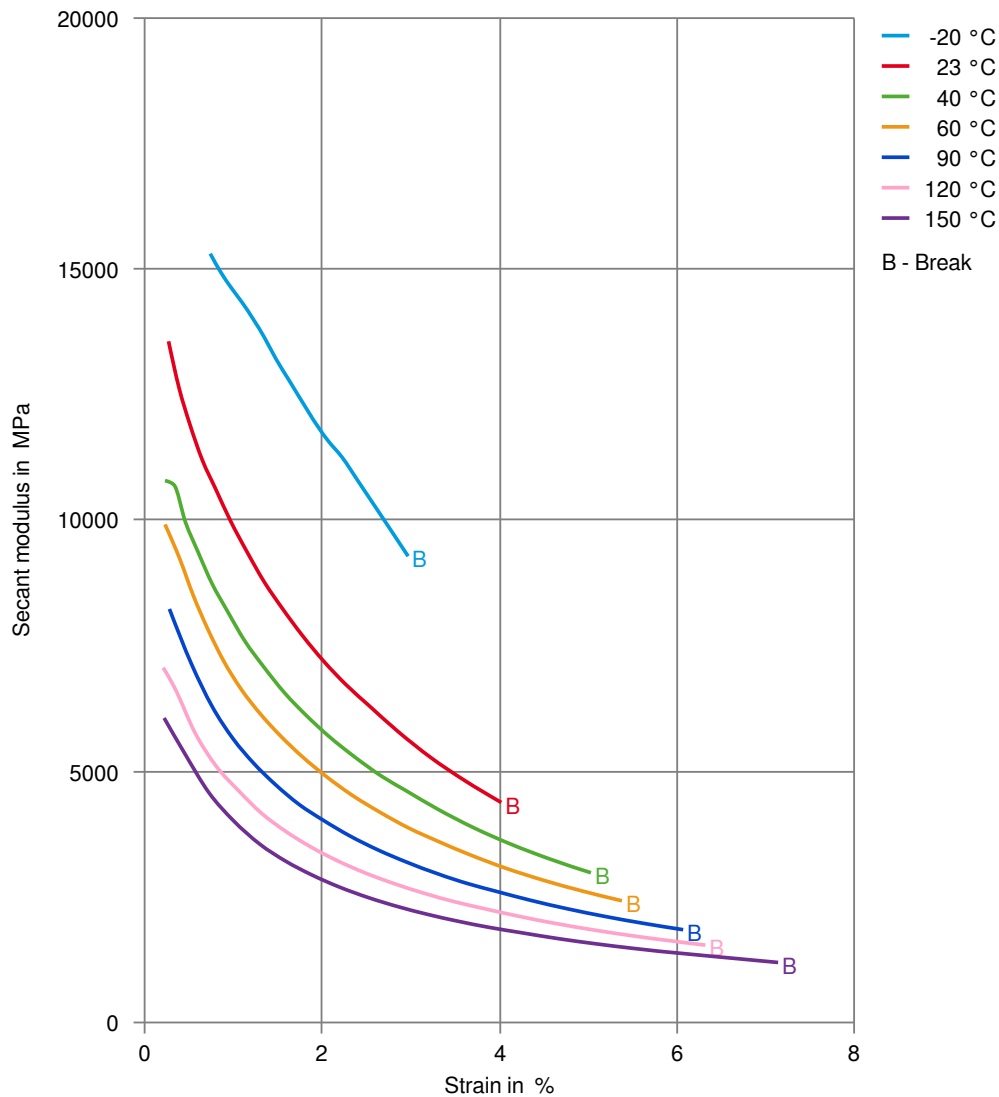
Secant modulus-strain (dry)



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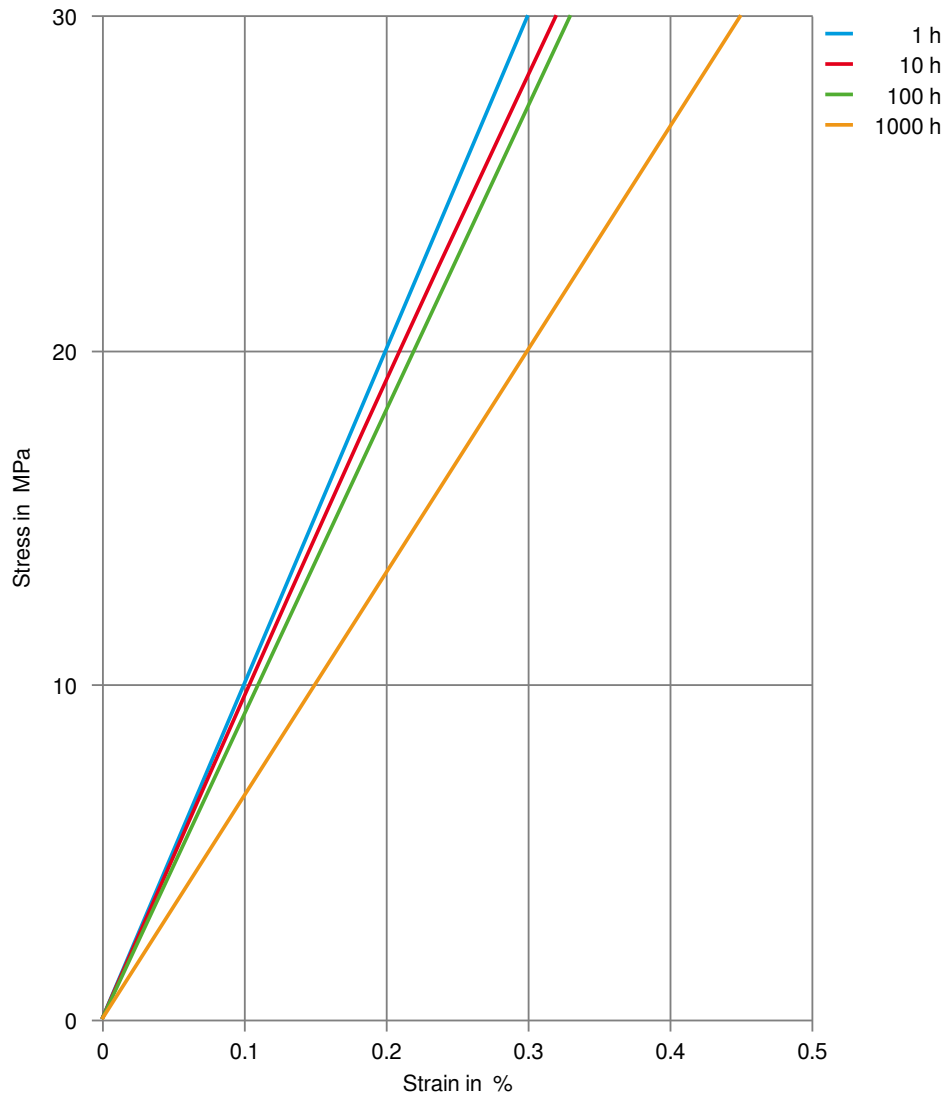
Secant modulus-strain (cond.)



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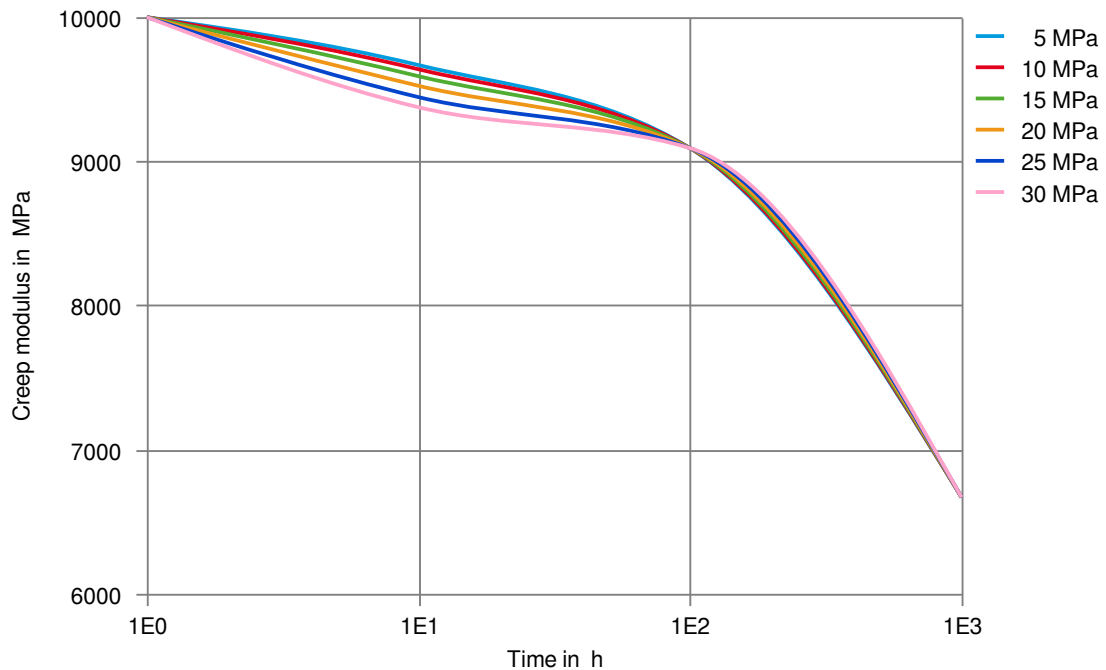
Stress-strain (isochronous) 23°C (cond.)



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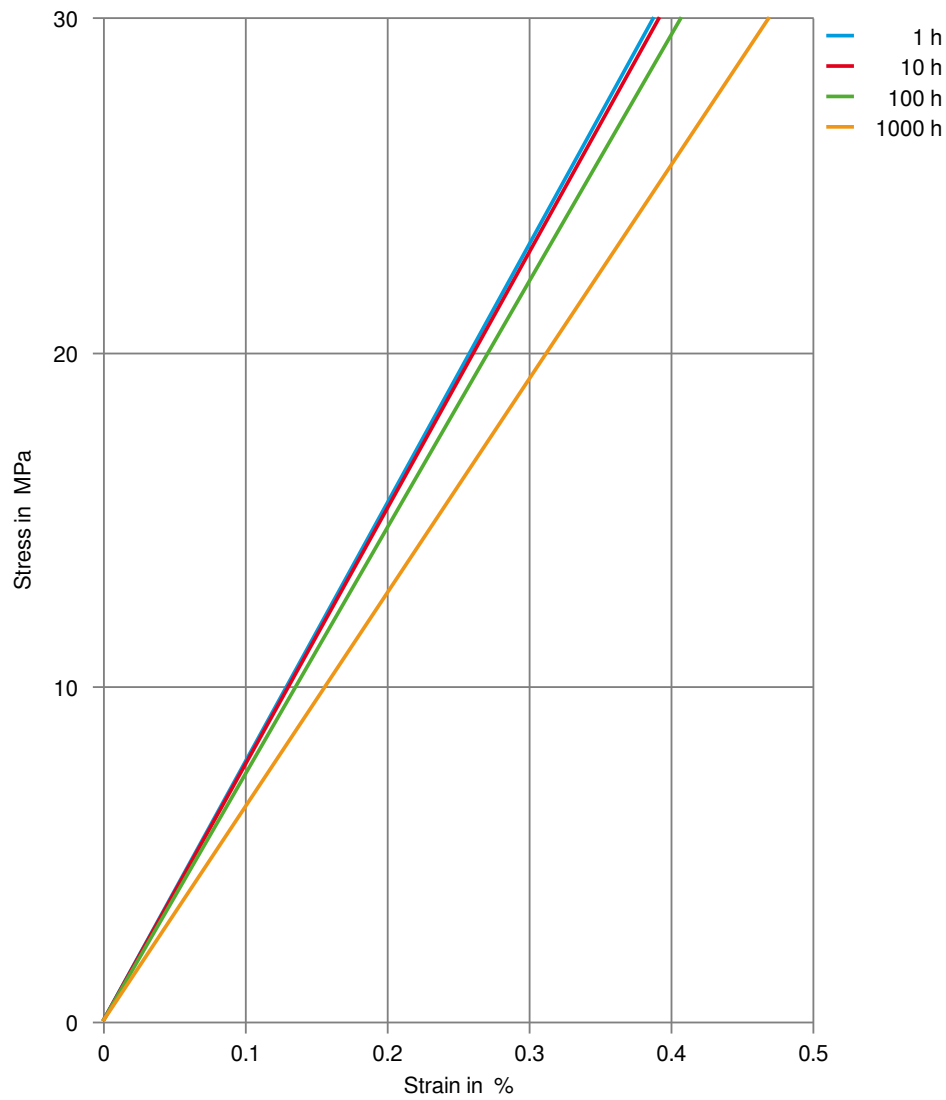
Creep modulus-time 23°C (cond.)



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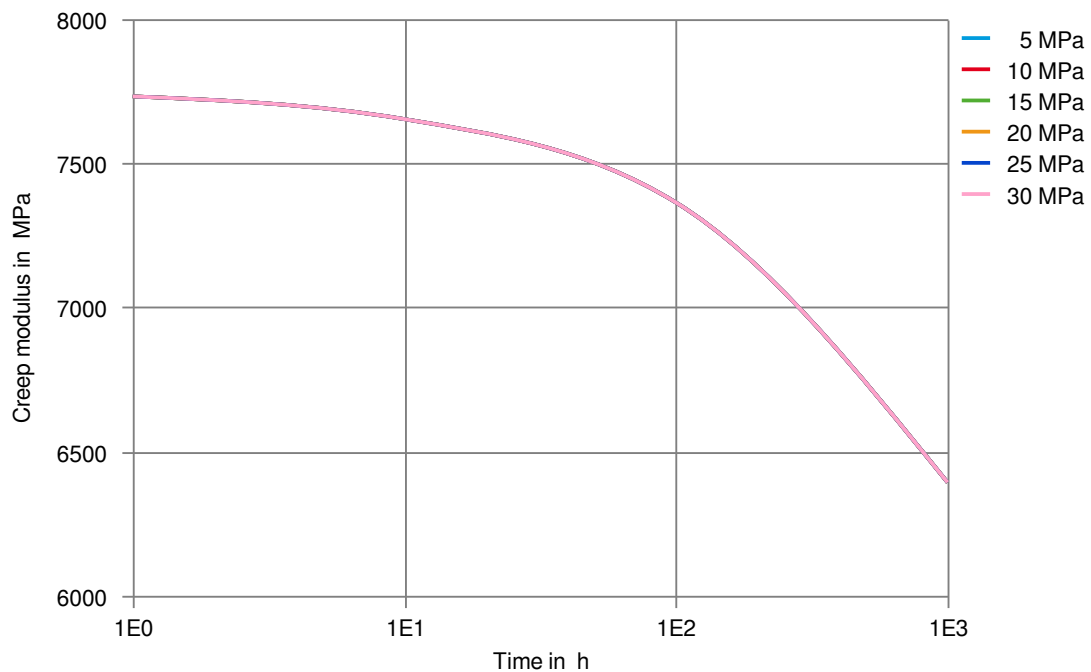
Stress-strain (isochronous) 100°C (dry)



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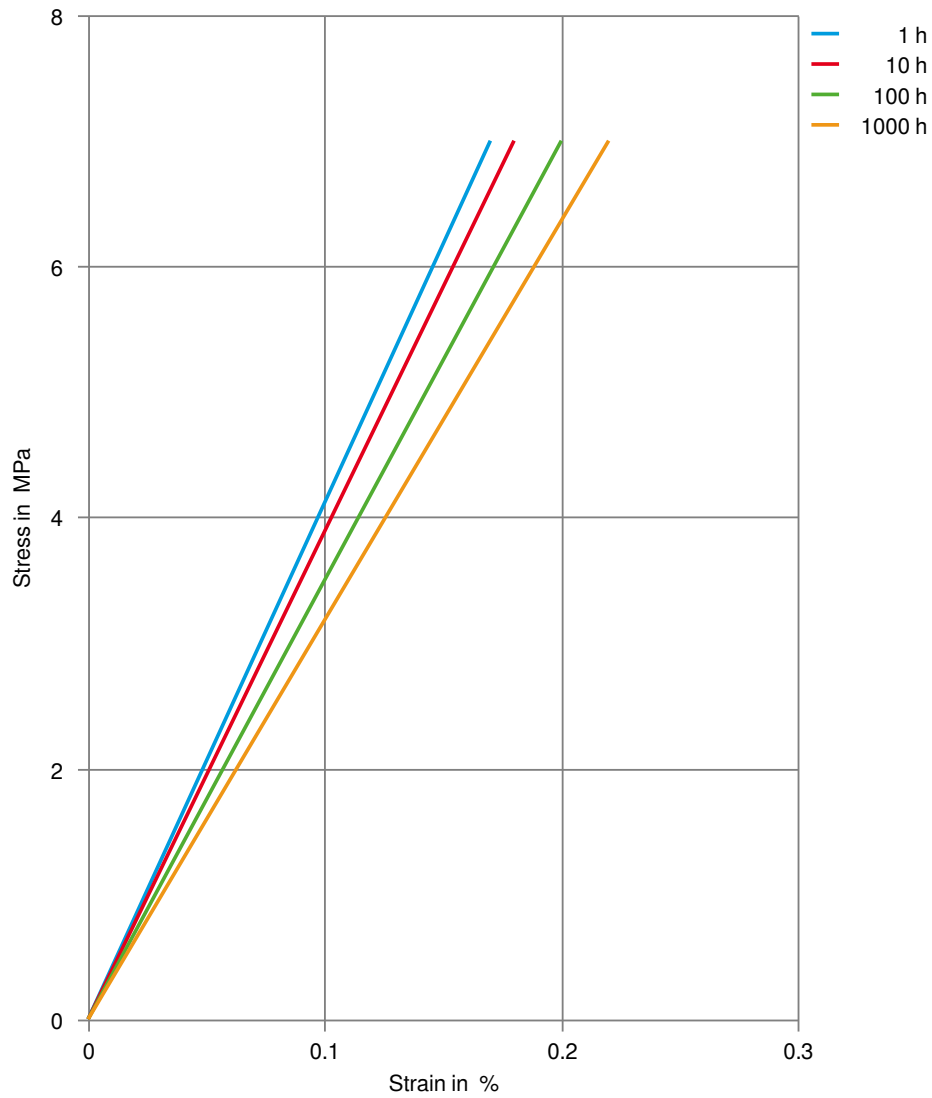
Creep modulus-time 100°C (dry)



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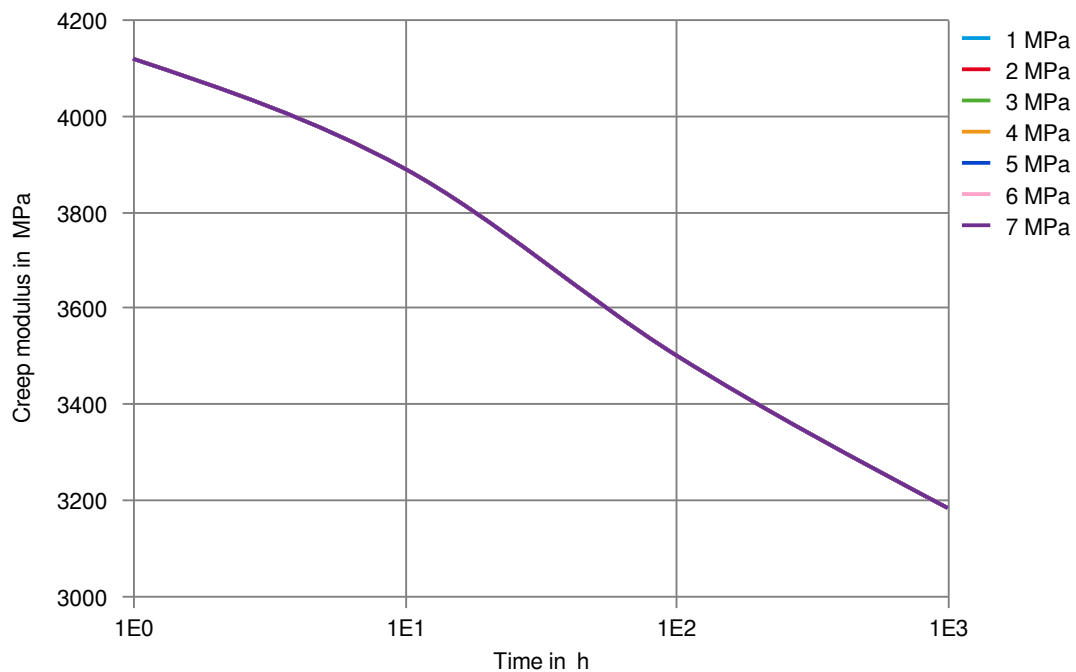
Stress-strain (isochronous) 200°C (dry)



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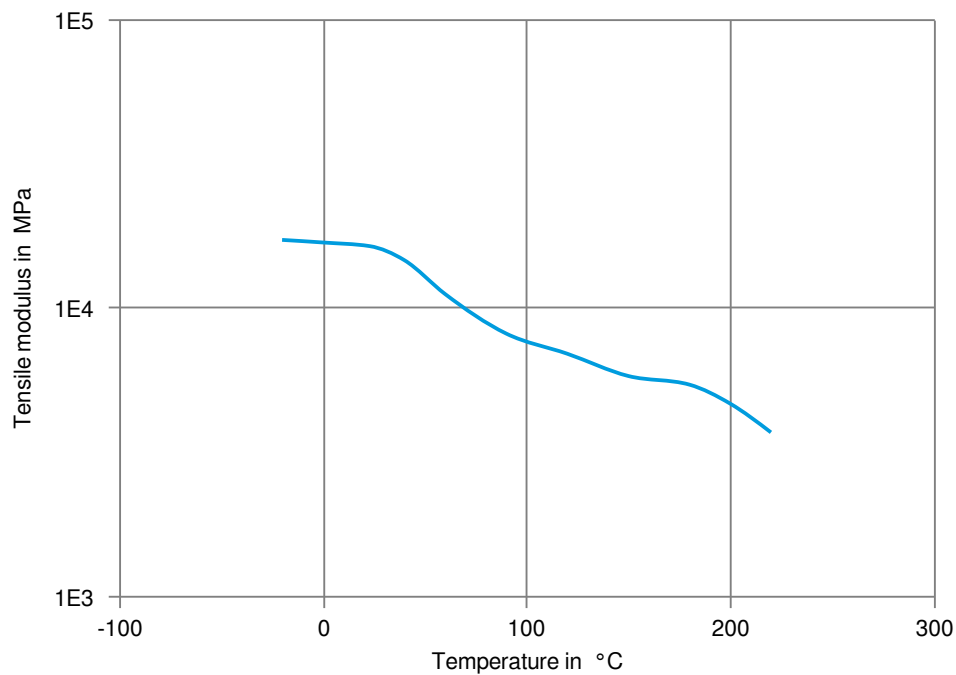
Creep modulus-time 200°C (dry)



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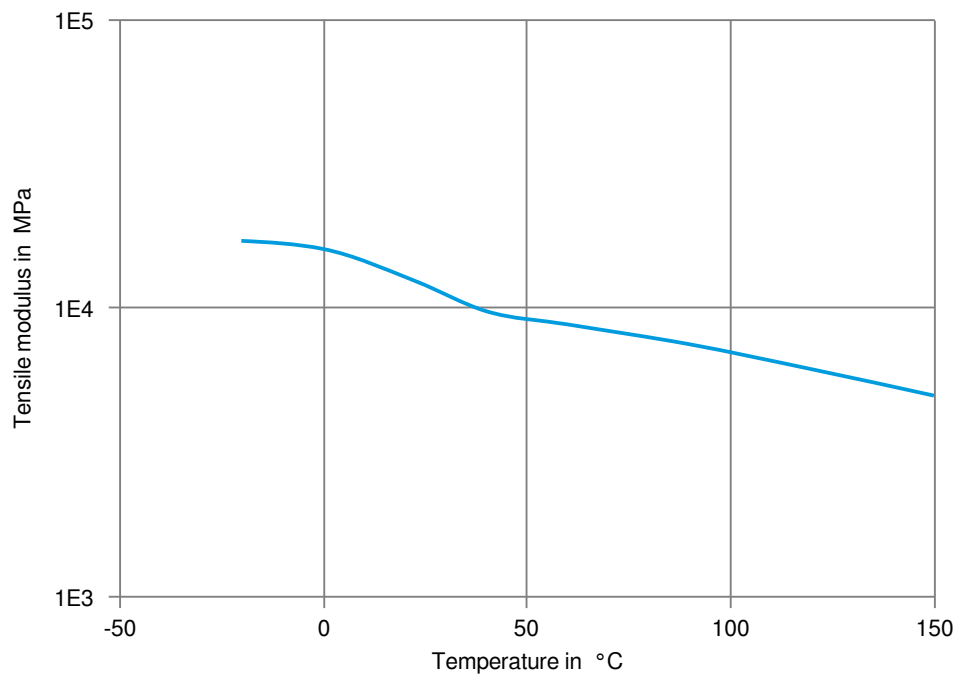
Tensile modulus-temperature (dry)



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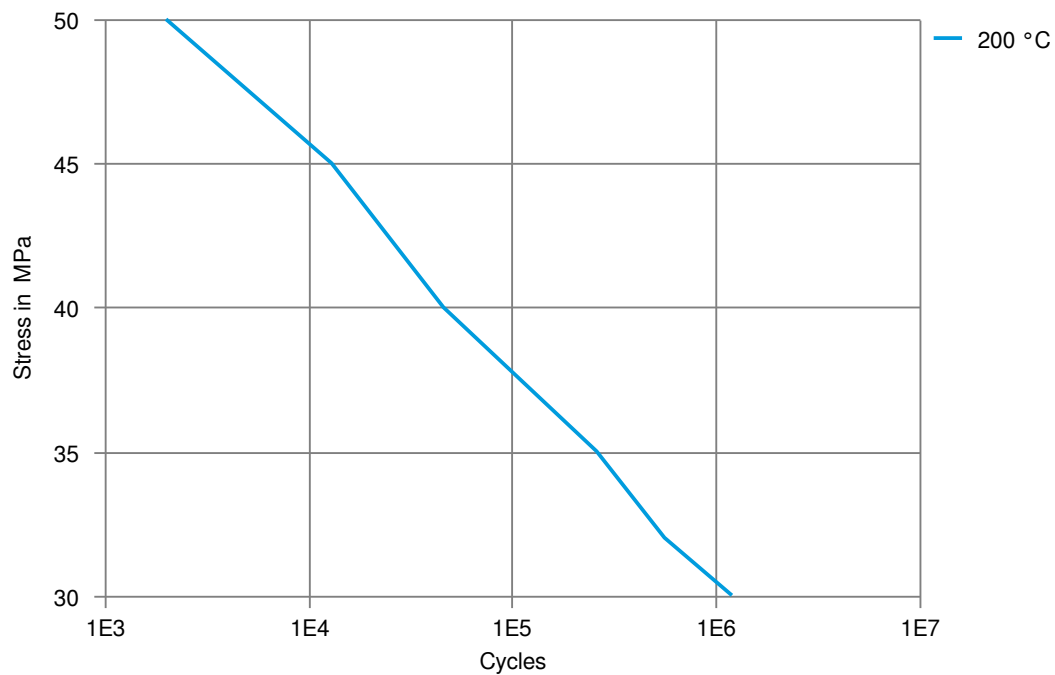
Tensile modulus-temperature (cond.)



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Tensile Fatigue, 10Hz, R=0.1 @ 2mm (dry)



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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

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
- ✓ Motor oil OS206 304 Ref.Eng.Oil, ISP, 135°C
- ✓ Automatic hypoid-gear oil Shell Donax TX, 135°C
- ✓ Hydraulic oil Pentosin CHF 202, 125°C

Other

- ✓ Ethylene Glycol (50% by mass) in water, 108°C
- ✗ Water, 90°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).