Zytel® PLS95G35DH1 BK549

ZYTEL® PLUS 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, DuPont recommends, 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 is a high flow, 35% glass fibre reinforced, DuPont™ 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,M1CGHR,S12-110	

Rheological properties

	dry/cond.		
Viscosity number	130/*[1]	cm³/g	ISO 307, 1157, 1628
Moulding shrinkage, parallel	0.2/-	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.7/-	%	ISO 294-4, 2577

[1]: sulphuric acid 96%

Typical mechanical properties

	dry/cond.		
Tensile Modulus	11000/8000	MPa	ISO 527-1/-2
Stress at break	200/140	MPa	ISO 527-1/-2
Strain at break	3.2/6	%	ISO 527-1/-2
Charpy impact strength, 23°C	75/90	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	70/70	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	12/14	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -40°C	12/-	kJ/m²	ISO 179/1eA
Hardness, Rockwell, M-scale	110/-	-	ISO 2039-2
Hardness, Rockwell, R-scale	125/115	-	ISO 2039-2
Ball indentation hardness, H 961/30	285/-	MPa	ISO 2039-1
Poisson's ratio	0.34/0.34	-	

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Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	267/*	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	85/-	°C	ISO 11357-1/-2
Temp. of deflection under load, 1.8 MPa	242/*	°C	ISO 75-1/-2
Temp. of deflection under load, 0.45 MPa	261/*	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	18/*	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	72/*	E-6/K	ISO 11359-1/-2
Thermal conductivity of melt	0.22	W/(m K)	
Spec. heat capacity of melt	2300	J/(kg K)	

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	44	mm/min	ISO 3795 (FMVSS 302)

Electrical properties

	dry/cond.		
Electric strength	43/42	kV/mm	IEC 60243-1
Electric Strength, Short Time, 1mm	28/22	kV/mm	IEC 60243-1
Electric Strength, Short Time, 2mm	20/14	kV/mm	IEC 60243-1

Other properties

	dry/cond.		
Humidity absorption, 2mm	1.8/*	%	Sim. to ISO 62
Water absorption, 2mm	6/*	%	Sim. to ISO 62
Density	1430/-	kg/m³	ISO 1183
Density of melt	1260	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	285	°C
Min. melt temperature	280	°C
Max. melt temperature	290	°C
Max. 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

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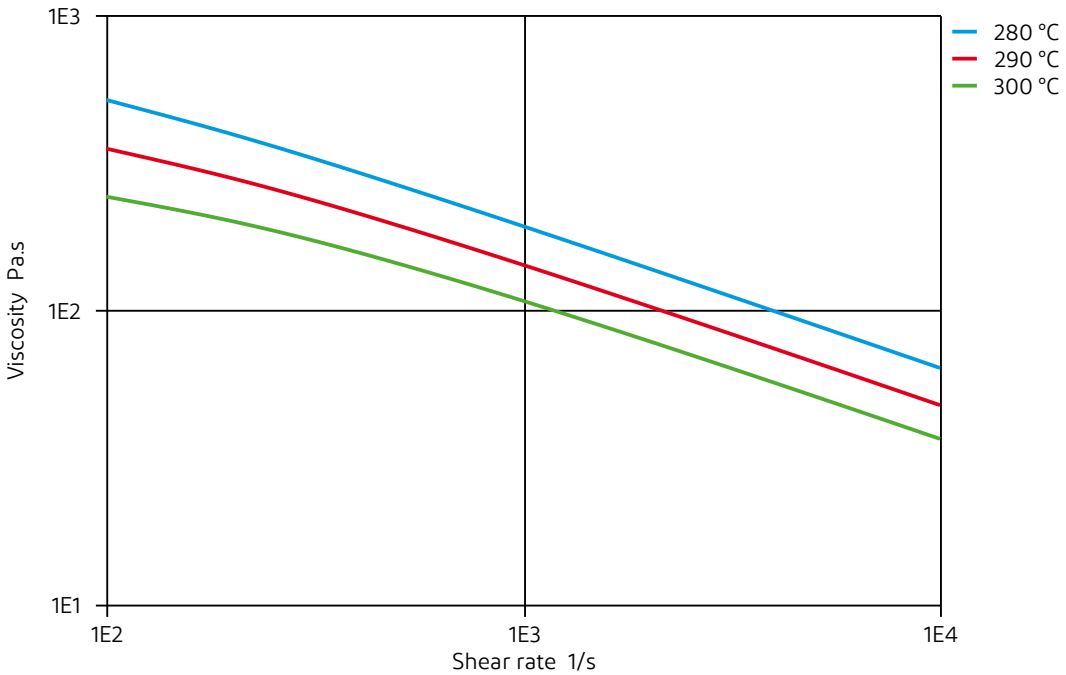
Characteristics

Additives	Release agent

Viscosity-shear rate



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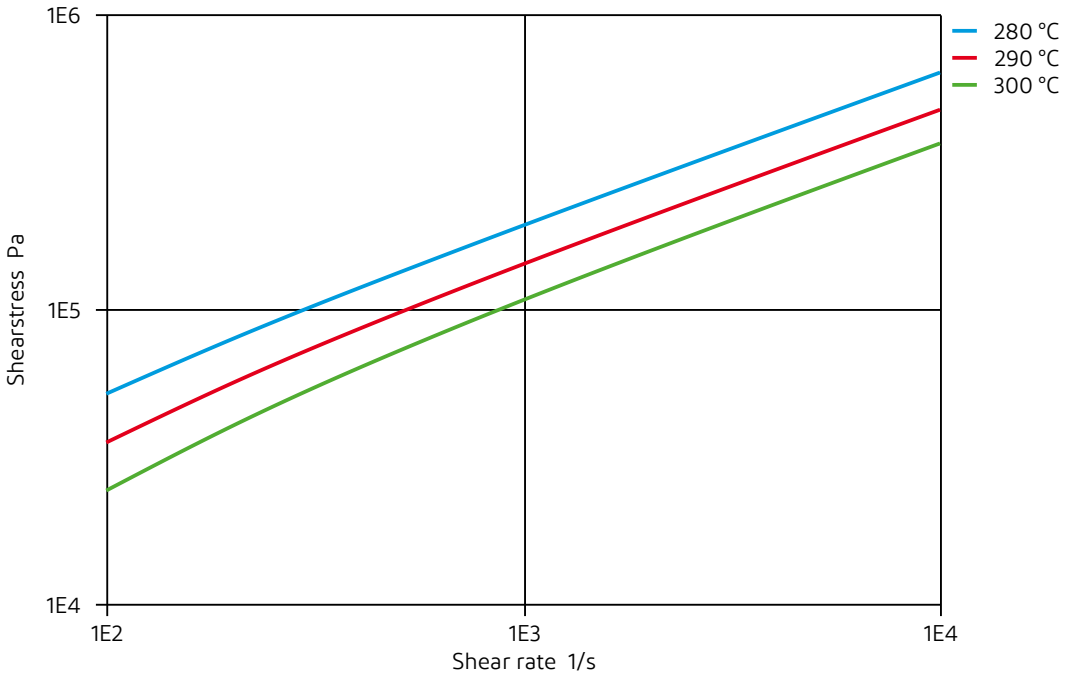
Shearstress-shear rate



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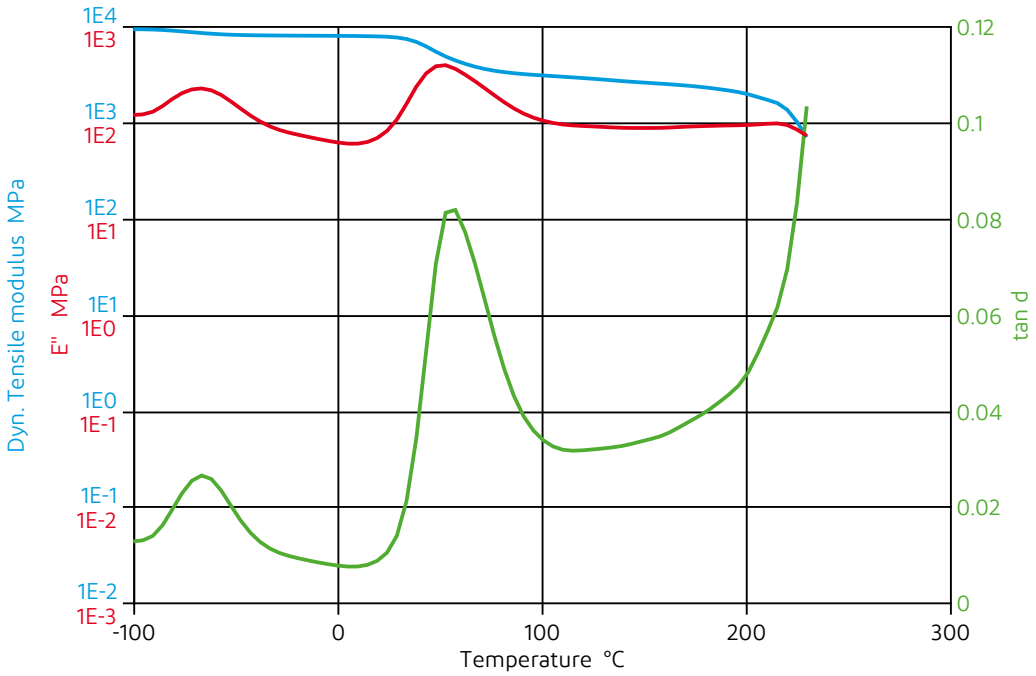
Dynamic Tensile modulus-temperature (dry)



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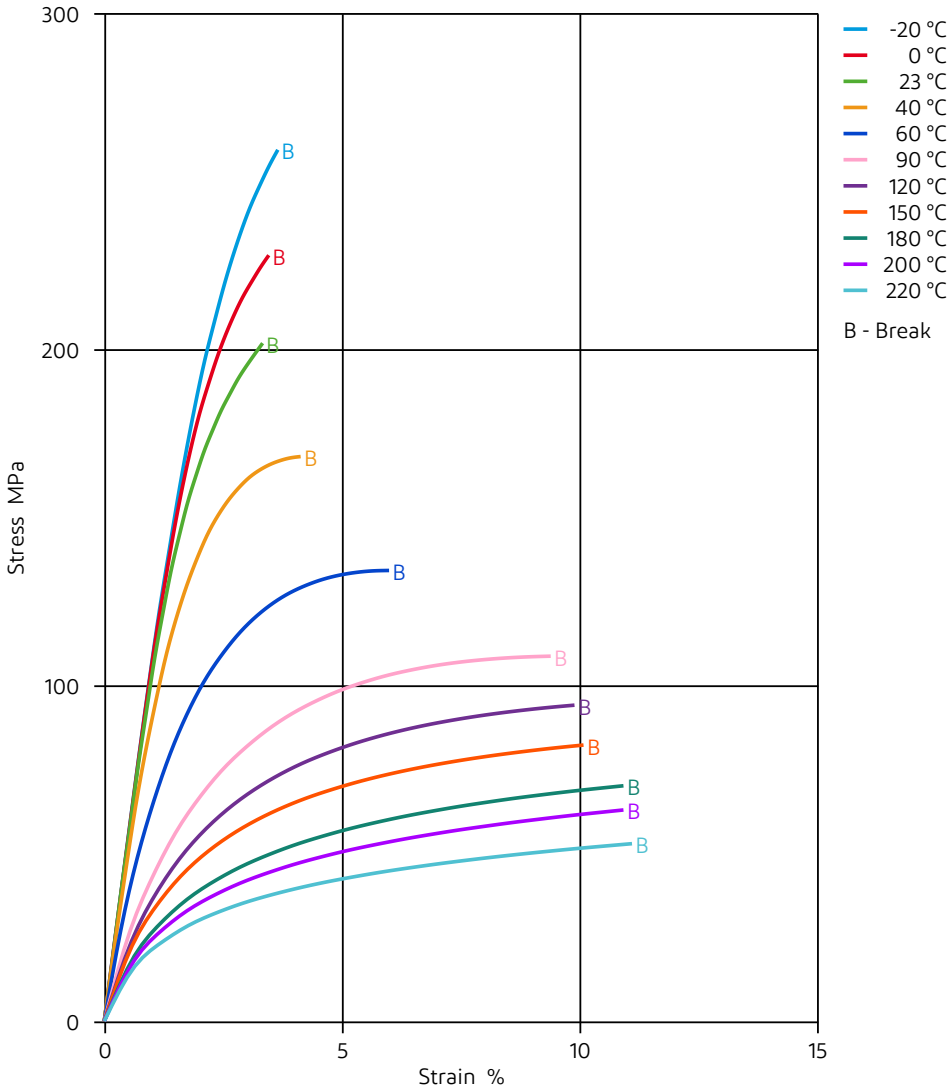
Stress-strain (dry)



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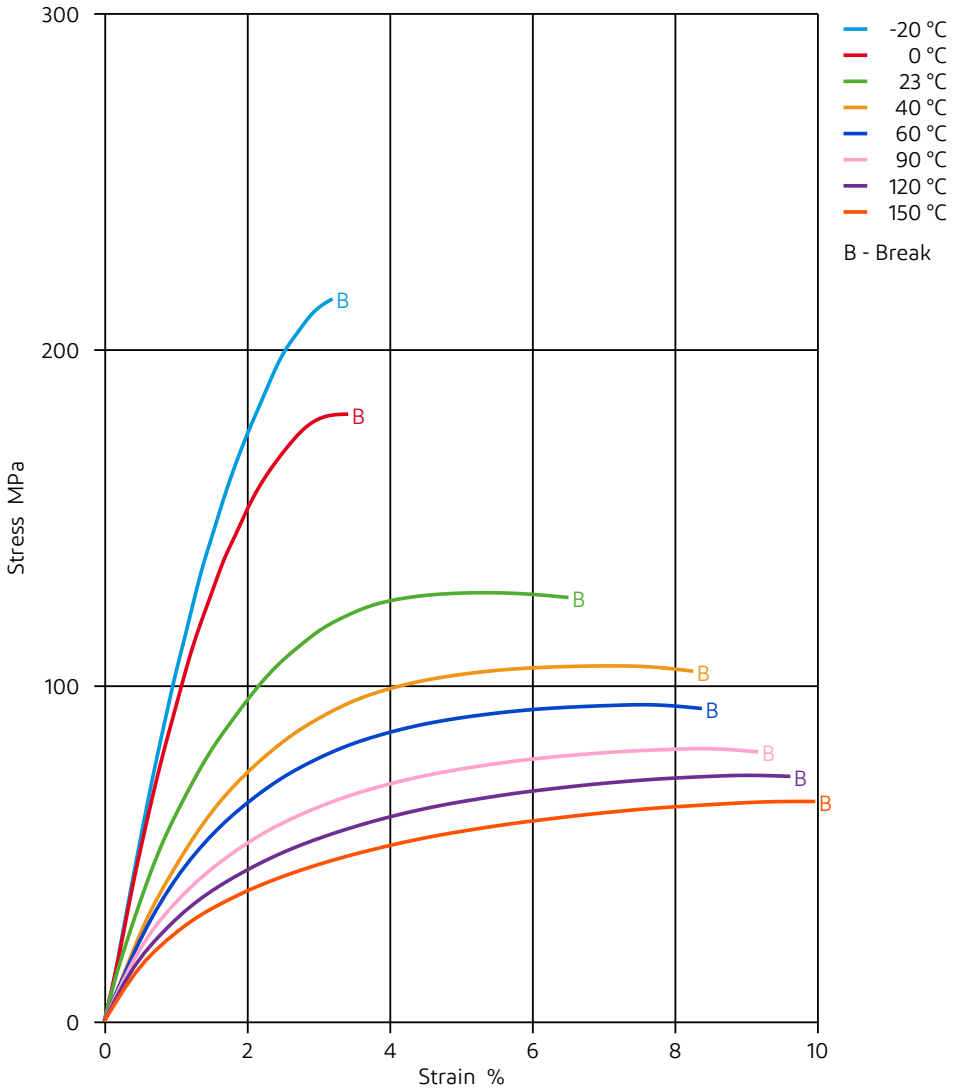
Stress-strain (cond.)



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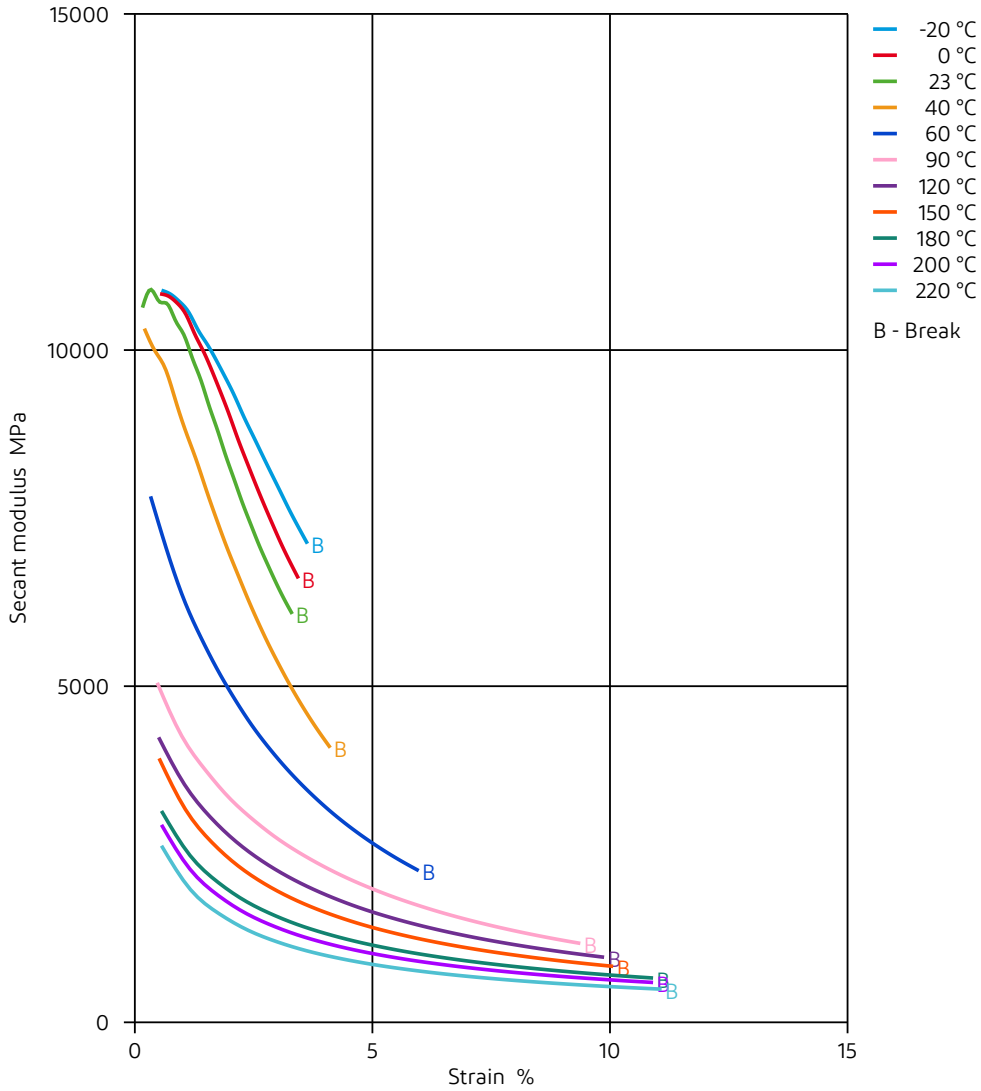
Secant modulus-strain (dry)



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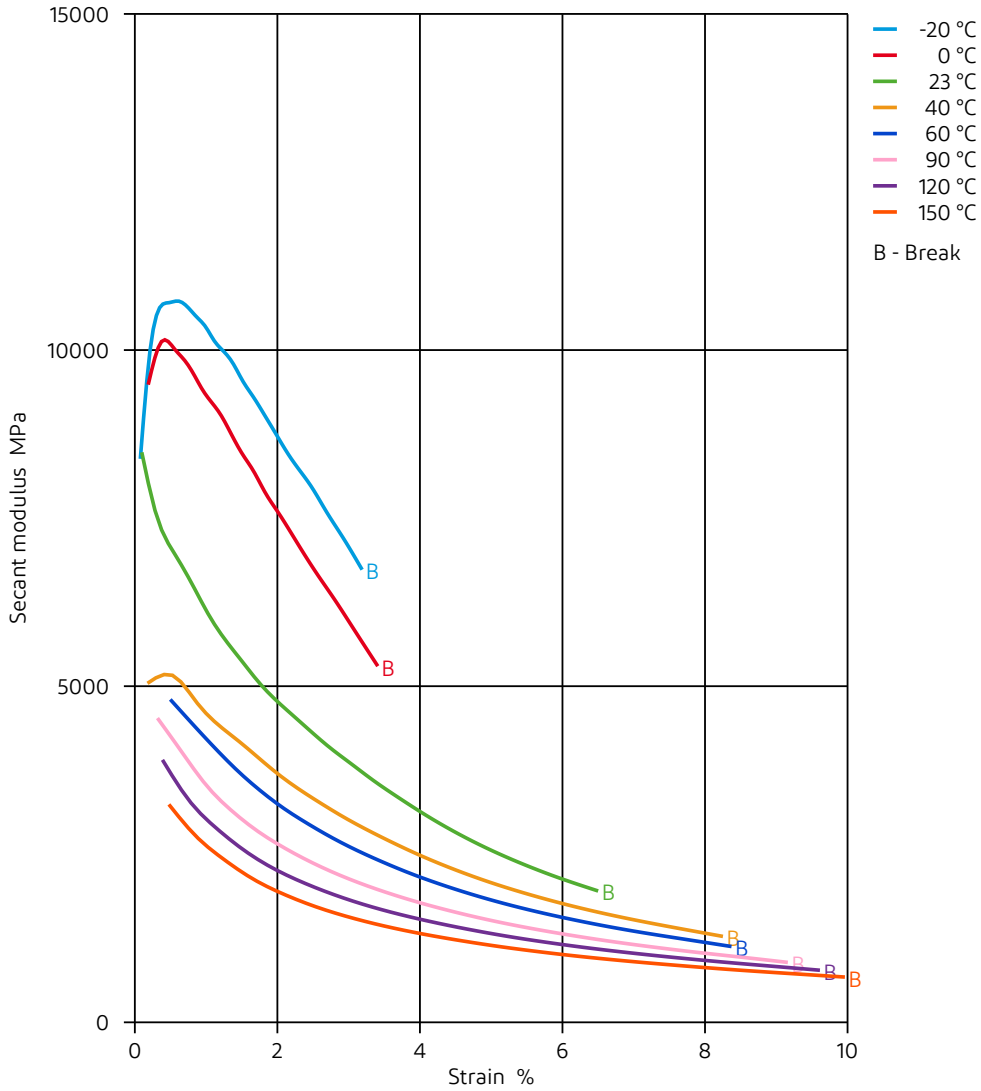
Secant modulus-strain (cond.)



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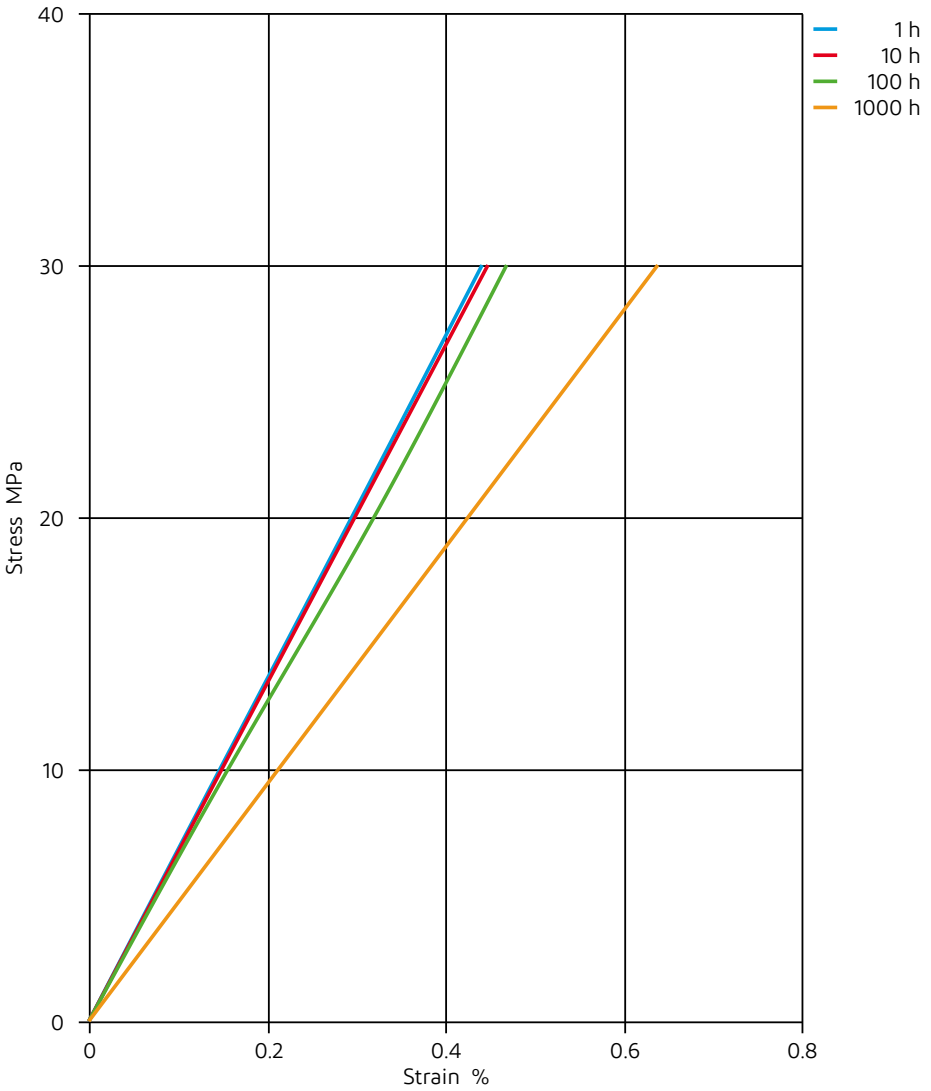
ZYTEL® PLUS NYLON RESIN

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



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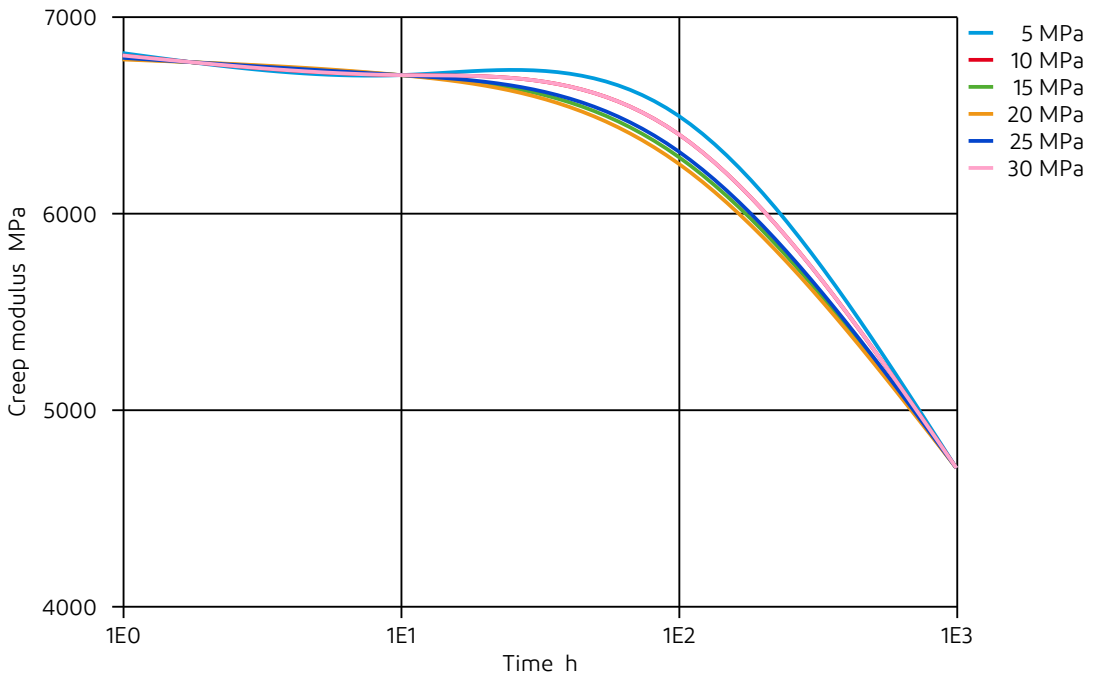
ZYTEL® PLUS NYLON RESIN

Creep modulus-time 23°C (cond.)



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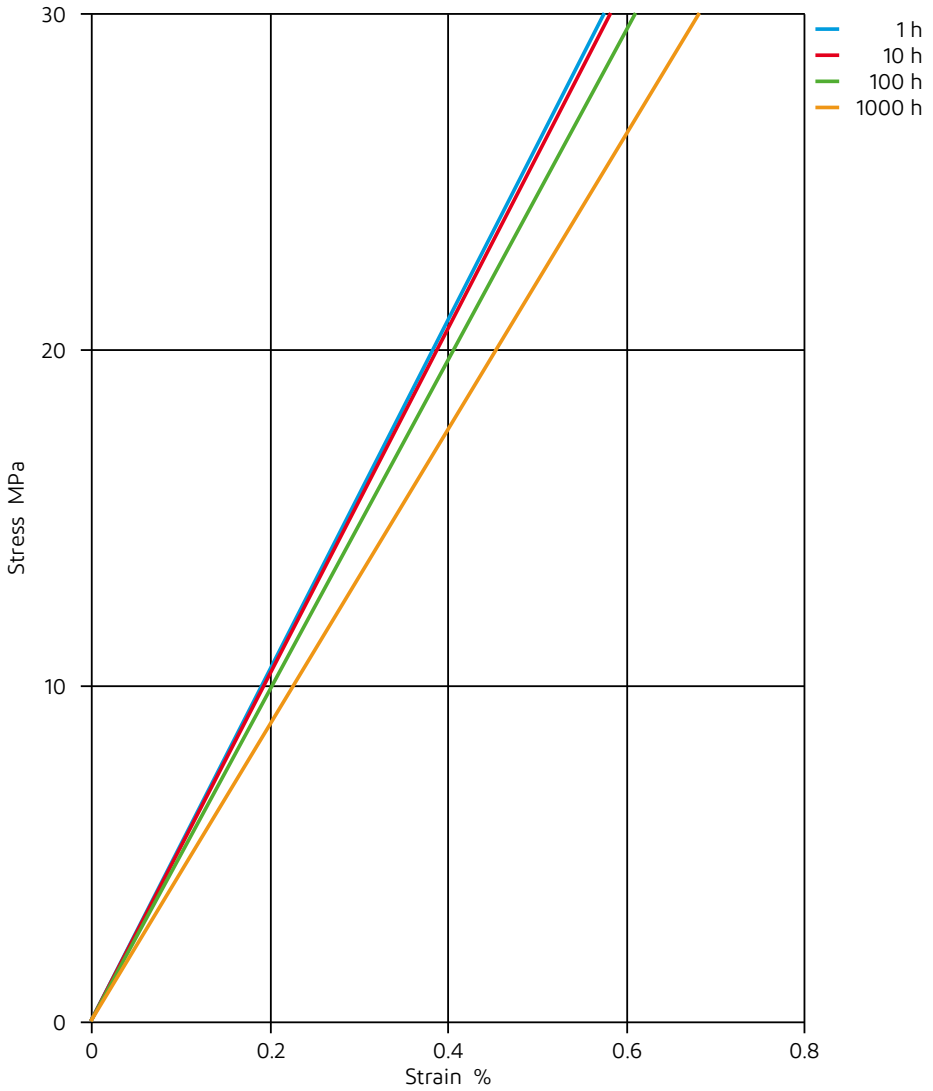
ZYTEL® PLUS NYLON RESIN

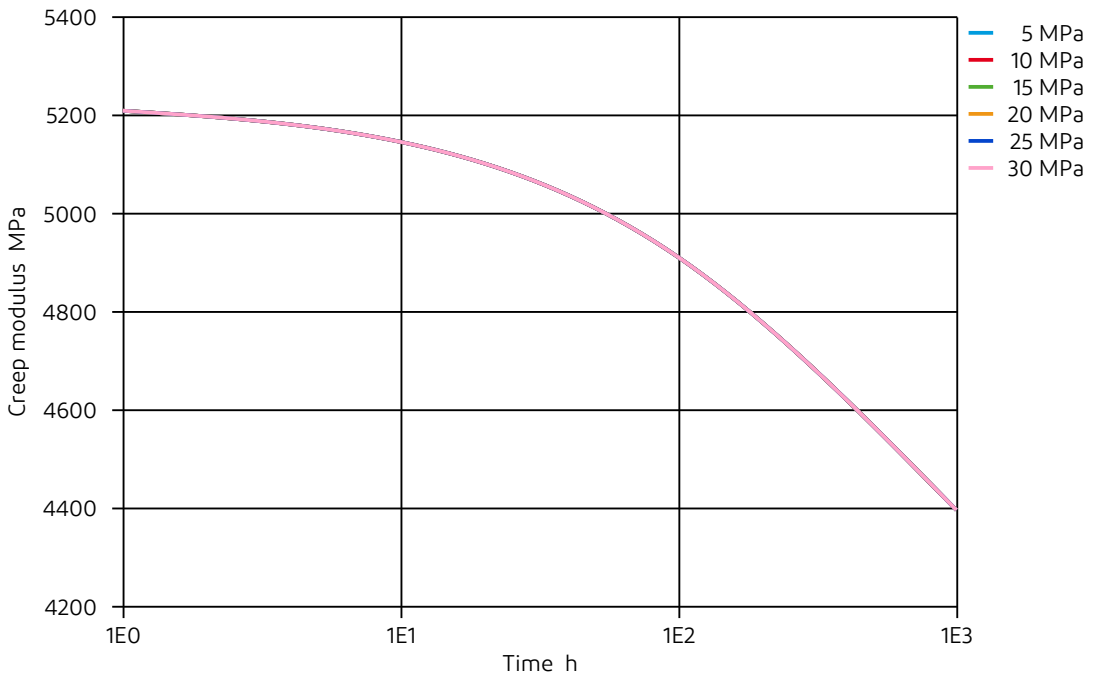
Stress-strain (isochronous) 100°C (dry)



Zytel® PLS95G35DH1 BK549

ZYTEL® PLUS NYLON RESIN

Creep modulus-time 100°C (dry)



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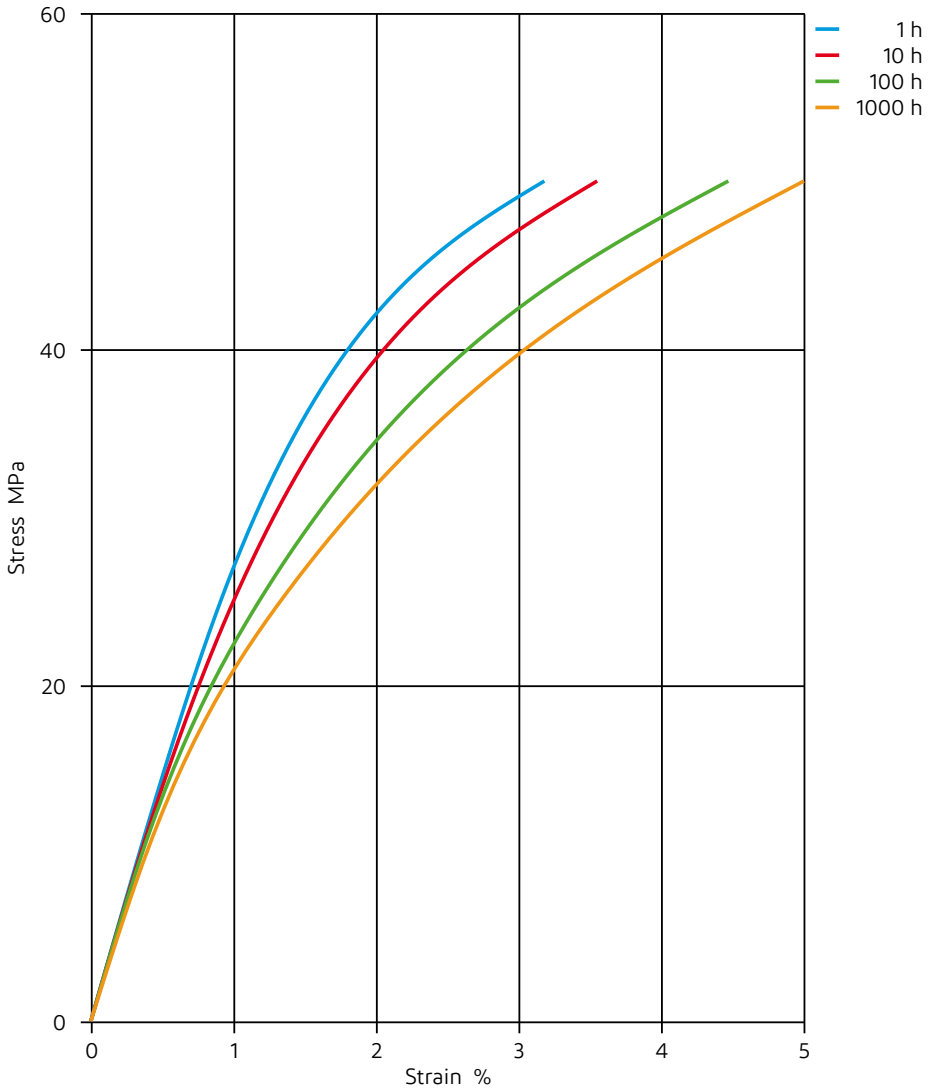
ZYTEL® PLUS NYLON RESIN

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



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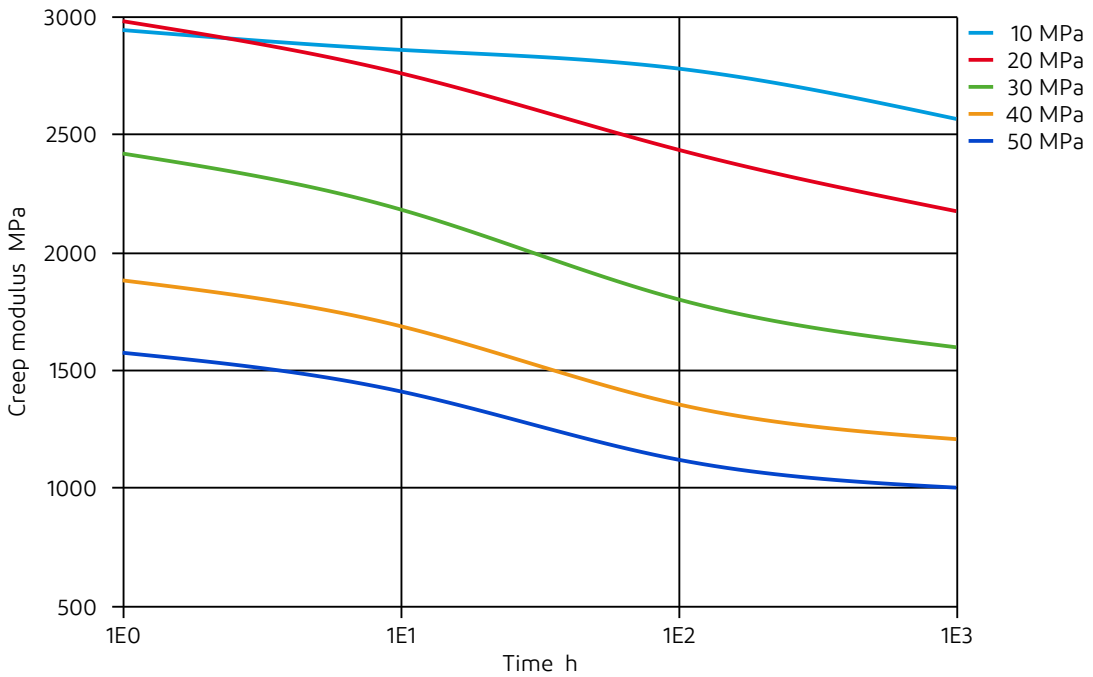
ZYTEL® PLUS NYLON RESIN

Creep modulus-time 180°C (dry)



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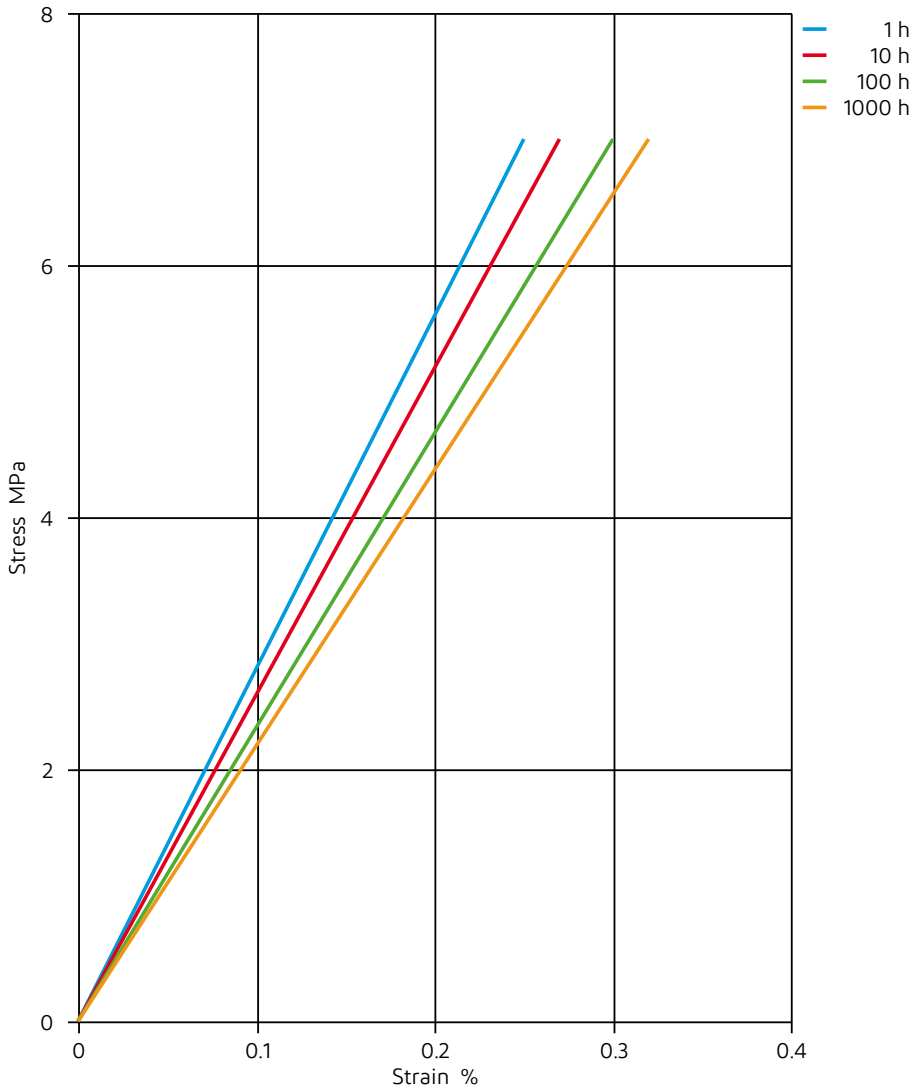
ZYTEL® PLUS NYLON RESIN

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



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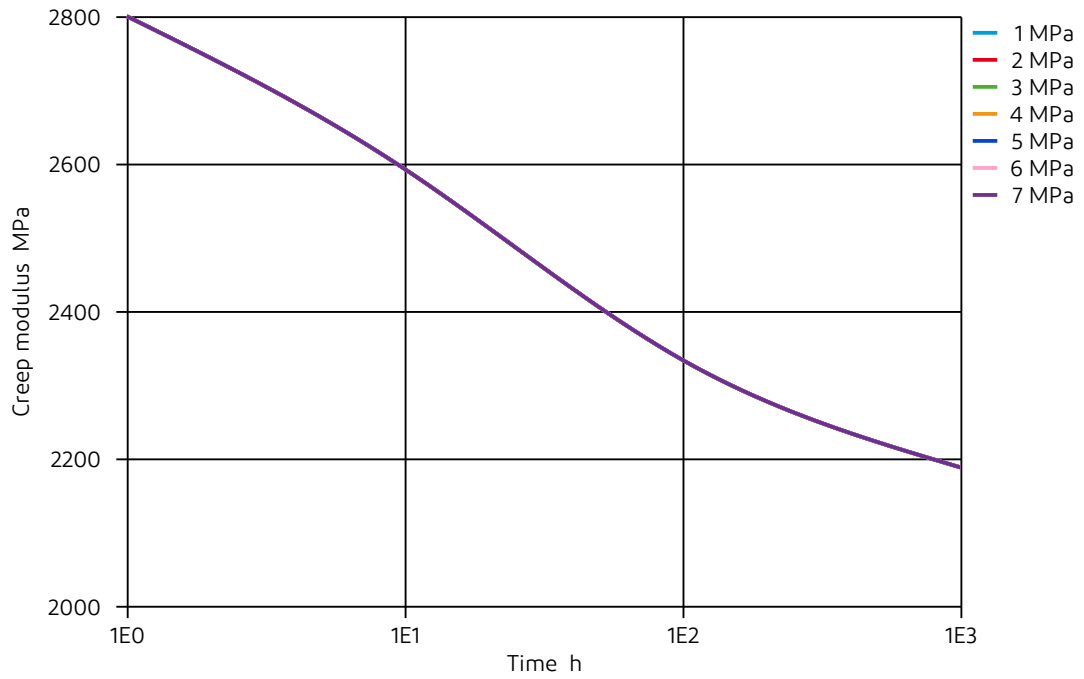
ZYTEL® PLUS NYLON RESIN

Creep modulus-time 200°C (dry)



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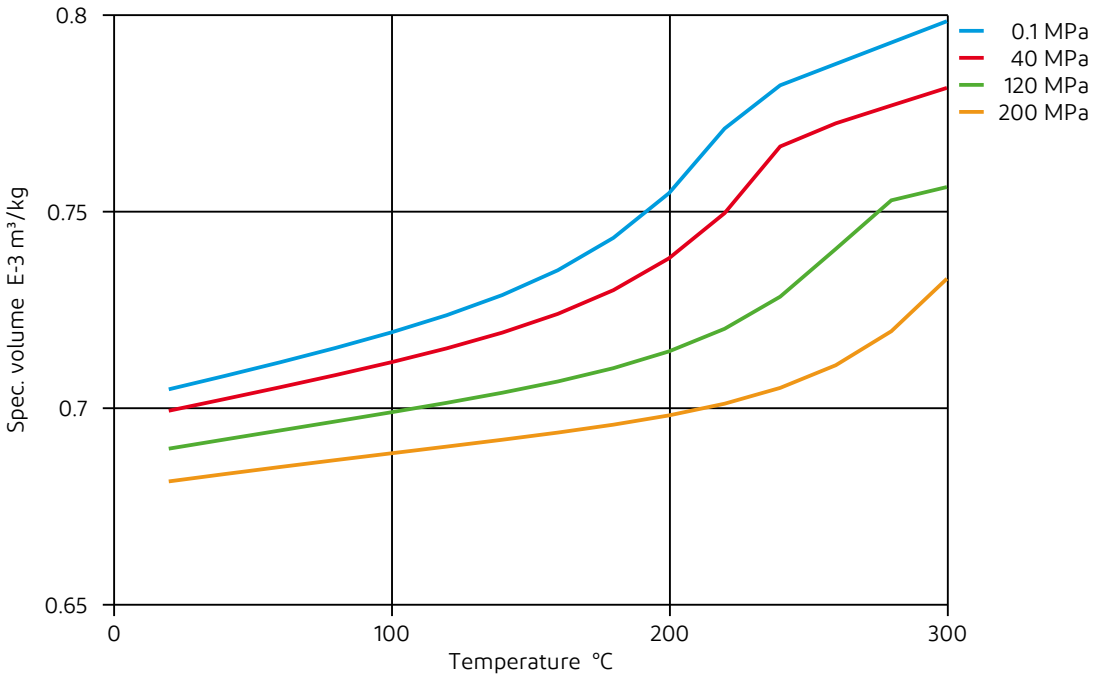
Specific volume-temperature (pvT)



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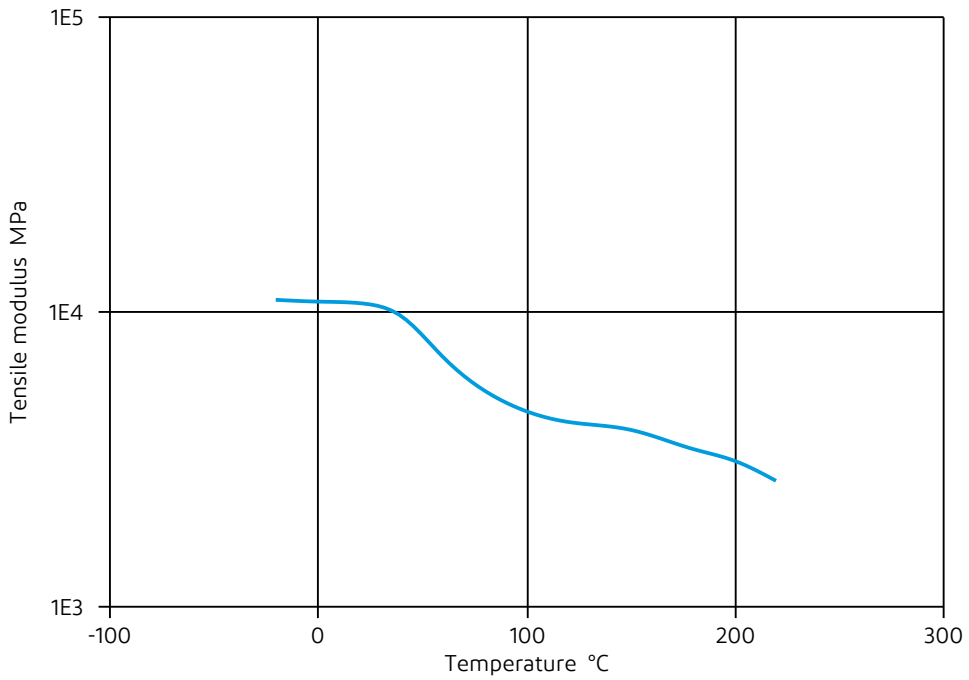
Tensile modulus-temperature (dry)



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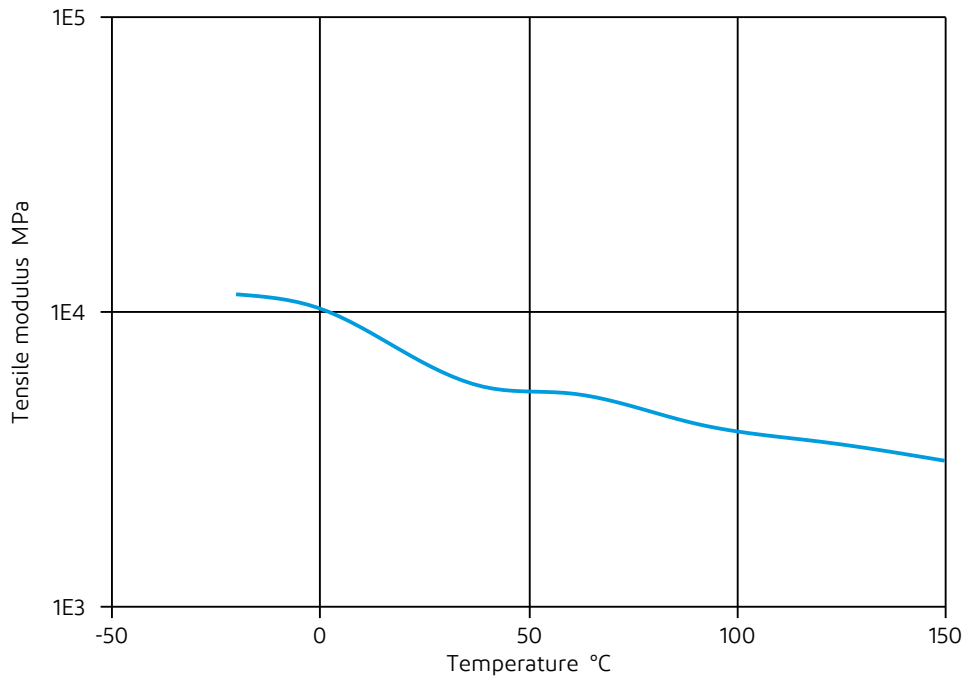
Tensile modulus-temperature (cond.)



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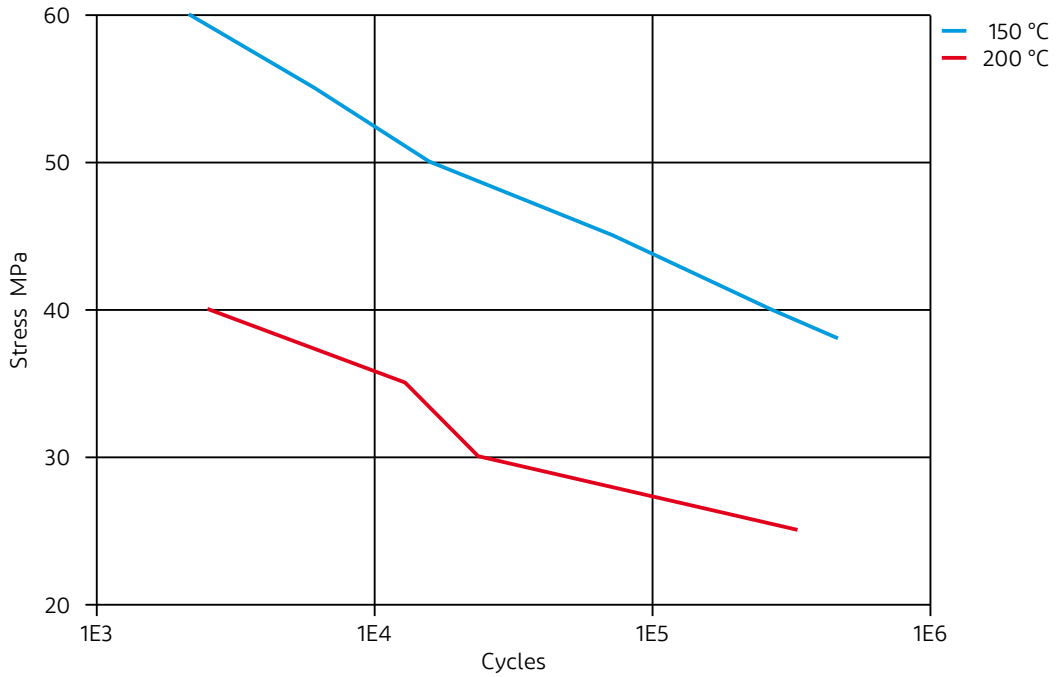
Tensile Fatigue, 10Hz, R=0.1 @ mm (dry)



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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, 130°C

Standard Fuels

- ✔ ISO 1817 Liquid 1 - E5, 60°C
- ✔ ISO 1817 Liquid 2 - M15E4, 60°C
- ✔ ISO 1817 Liquid 3 - M3E7, 60°C
- ✔ ISO 1817 Liquid 4 - M15, 60°C
- ✔ Standard fuel without alcohol (pref. ISO 1817 Liquid C), 23°C
- ✔ Standard fuel with alcohol (pref. ISO 1817 Liquid 4), 23°C
- ✔ Diesel fuel (pref. ISO 1817 Liquid F), 23°C
- ✘ Diesel fuel (pref. ISO 1817 Liquid F), 90°C
- ✘ Diesel fuel (pref. ISO 1817 Liquid F), >90°C

Salt solutions

- ✘ Zinc Chloride solution (50% by mass), 23°C

Other

- ✔ Ethylene Glycol (50% by mass) in water, 108°C
- ✔ Water, 23°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).