Celanese
The chemistry inside innovation™

Zytel® RS78G33FHS BK083

LONG CHAIN POLYAMIDE RESIN

Zytel® RS78G33FHS BK083 is a 33% glass reinforced, biobased, heat stabilized, polyamide 610 resin.

Product information

Resin Identification	PA610-GF35	ISO 1043
Part Marking Code	>PA610-GF35<	ISO 11469
ISO designation	ISO 16396-PA610,GF33,M1CGH,S14-100	
Biobased carbon content	≥60[C] %	ISO 16620-2

[C]: Calculated

Rheological properties

	dry/cond.		
Melt mass-flow rate	18 / *	g/10min	ISO 1133
Melt mass-flow rate, Temperature	250 / *	°C	
Melt mass-flow rate, Load	10 / *	kg	
Moulding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.6 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile Modulus	10000 / 8200	MPa	ISO 527-1/-2
Stress at break, 5mm/min	190 / 140	MPa	ISO 527-1/-2
Strain at break, 5mm/min	3.1 / 4.3	%	ISO 527-1/-2
Flexural Modulus	9100 / 7500	MPa	ISO 178
Flexural Strength	280 / 220	MPa	ISO 178
Charpy impact strength, 23°C	90 / 83	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	74 / 72	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	13 / 13	kJ/m²	ISO 179/1eA
Charpy notched impact strength, -30°C	11 / 11	kJ/m²	ISO 179/1eA
Poisson's ratio	0.34 / 0.34		

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	225 / *	°C	ISO 11357-1/-3
Glass transition temperature, 10°C/min	60 / 50	°C	ISO 11357-1/-3
Temp. of deflection under load, 1.8 MPa	210 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	21 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel	19 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	14 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	79 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	97 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	142 / *	E-6/K	ISO 11359-1/-2
Thermal conductivity	0.41	W/(m K)	ISO 22007-2
Spec. heat capacity of melt	2130	J/(kg K)	Internal
Spec. heat capacity solid	1120	J/(kg K)	Internal

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TGA curve	available		ISO 11359-1/-2

Flammability

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	4E12 / -	Ohm.m	IEC 62631-3-1
Surface resistivity	* / 4E12	Ohm	IEC 62631-3-2
Electric strength	35 / -	kV/mm	IEC 60243-1
Comparative tracking index	575 / -		IEC 60112

Other properties

	dry/cond.		
Humidity absorption, 2mm	1.1 / *	%	Sim. to ISO 62
Water absorption, 2mm	2.9 / *	%	Sim. to ISO 62
Water absorption, Immersion 24h	0.9 / *	%	Sim. to ISO 62
Density	1340 / -	kg/m³	ISO 1183

Injection

Drying Temperature	80	°C	
Drying Time, Dehumidified Dryer	2 - 4	h	
Processing Moisture Content	≤0.15	%	
Melt Temperature Optimum	285	°C	Internal
Min. melt temperature	270	°C	
Max. melt temperature	300	°C	
Mold Temperature Optimum	95	°C	
Min. mould temperature	70	°C	
Max. mould temperature	120	°C	

Characteristics

Additives	Biobased

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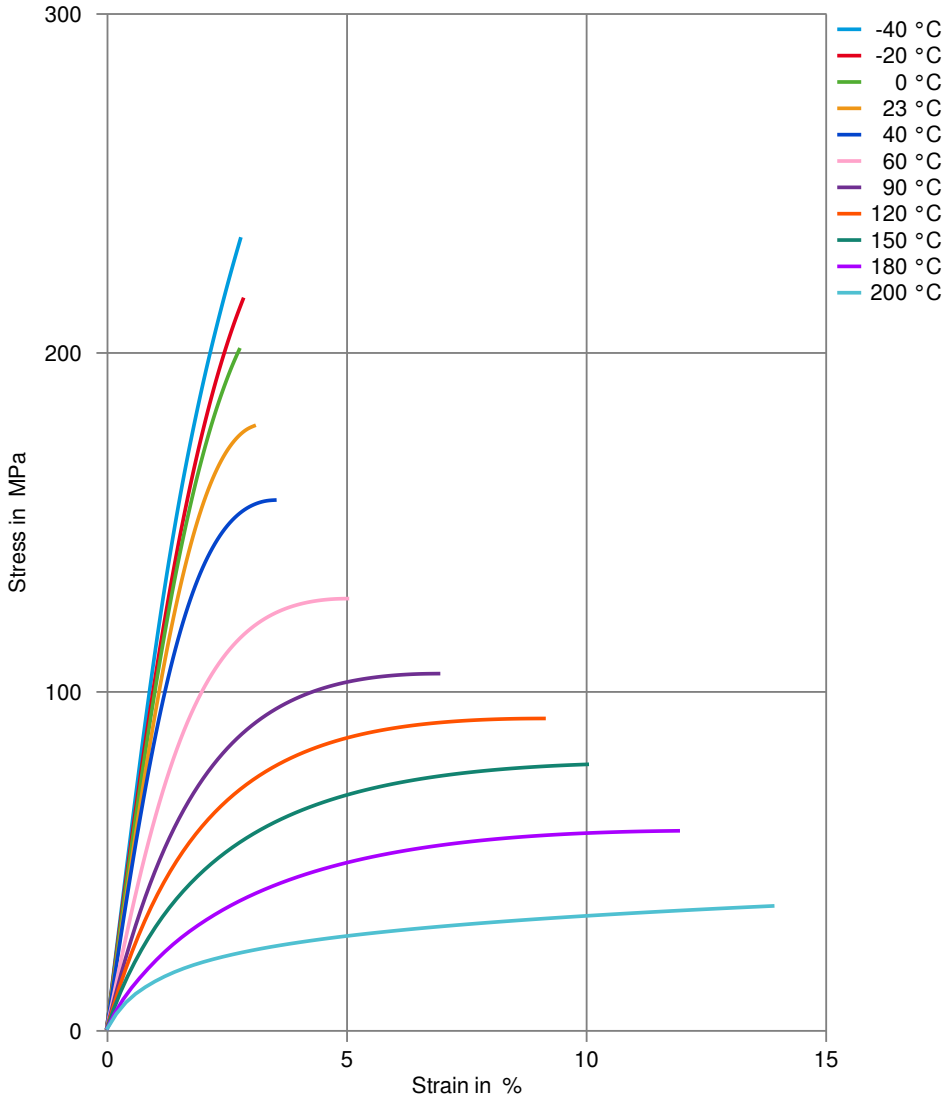
Stress-strain (dry)



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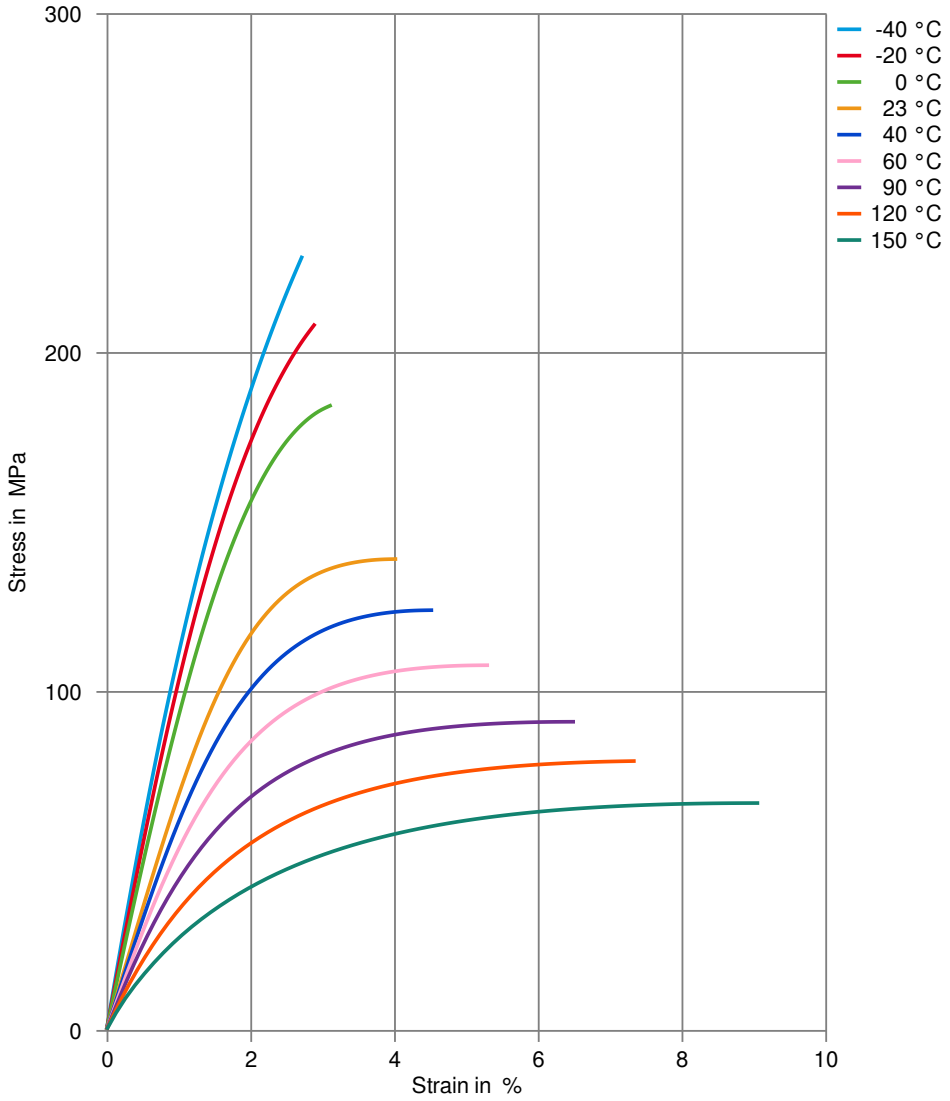
Stress-strain (cond.)



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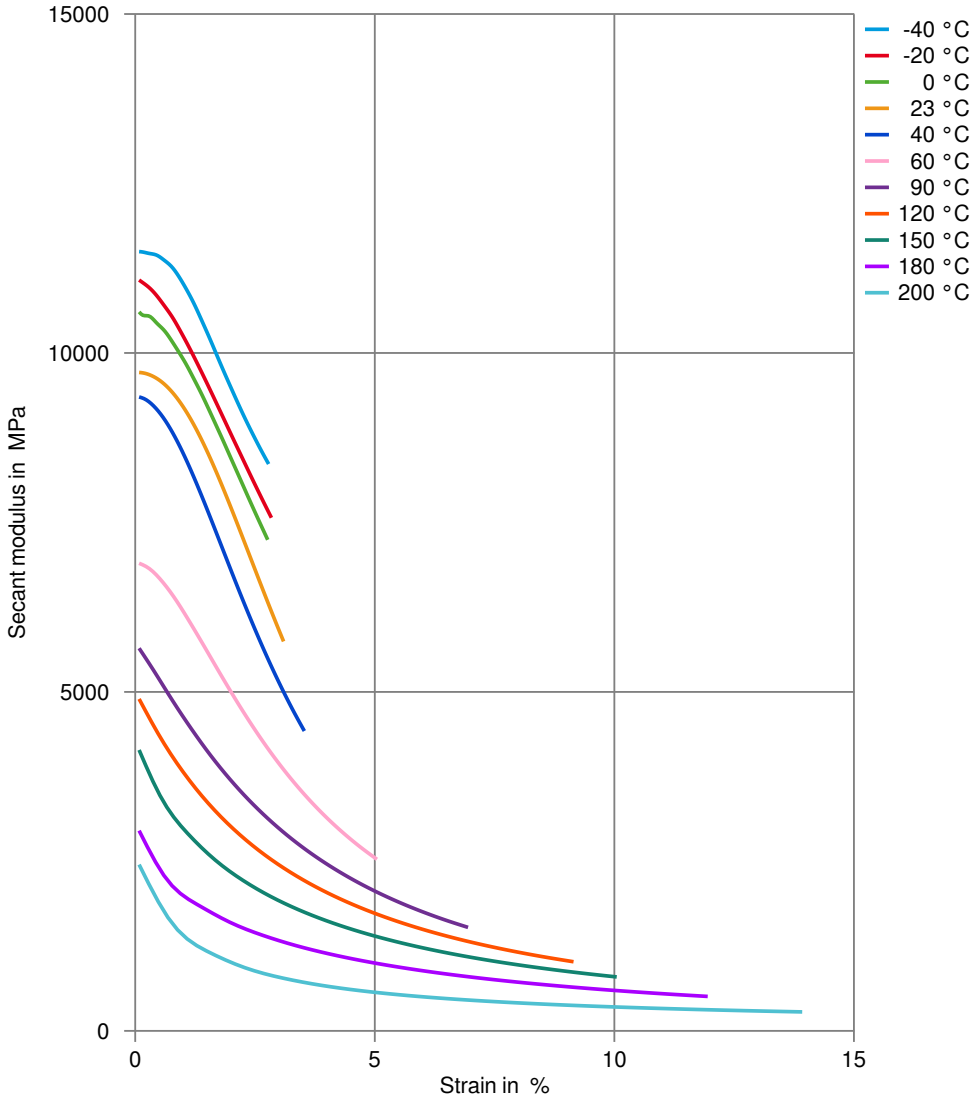
Secant modulus-strain (dry)



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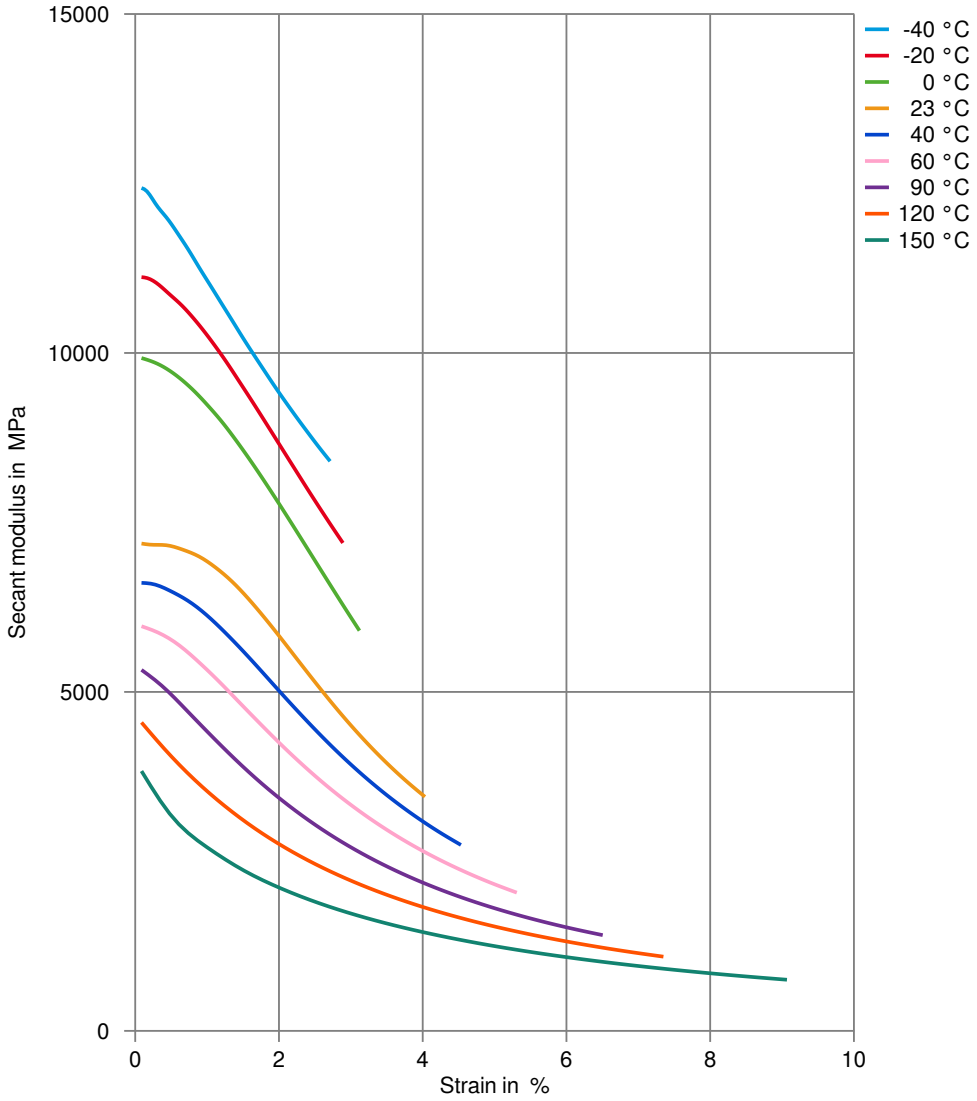
Secant modulus-strain (cond.)



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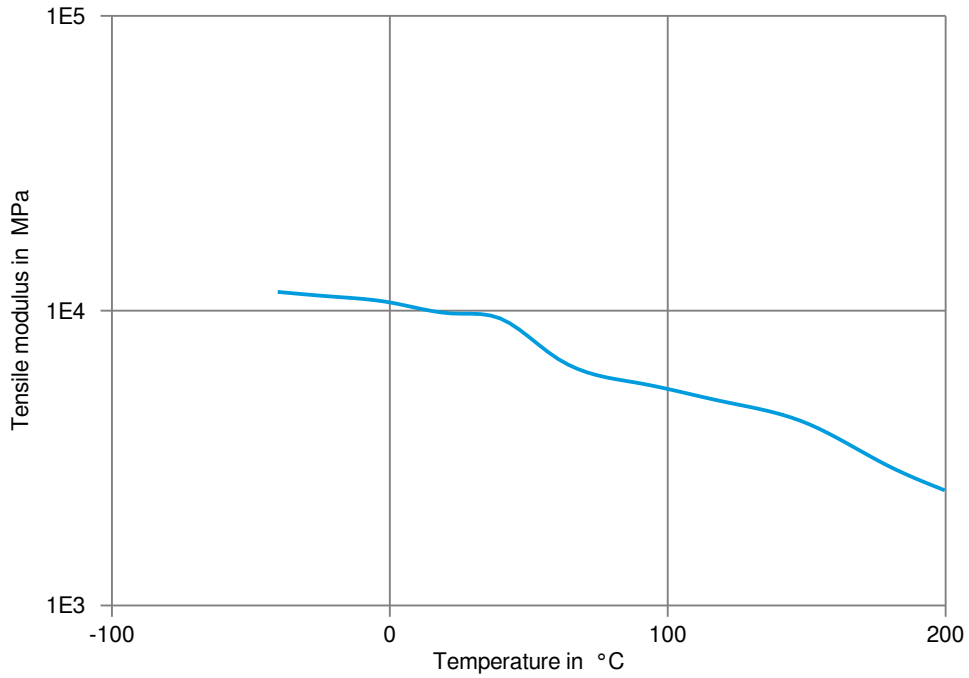
Tensile modulus-temperature (dry)



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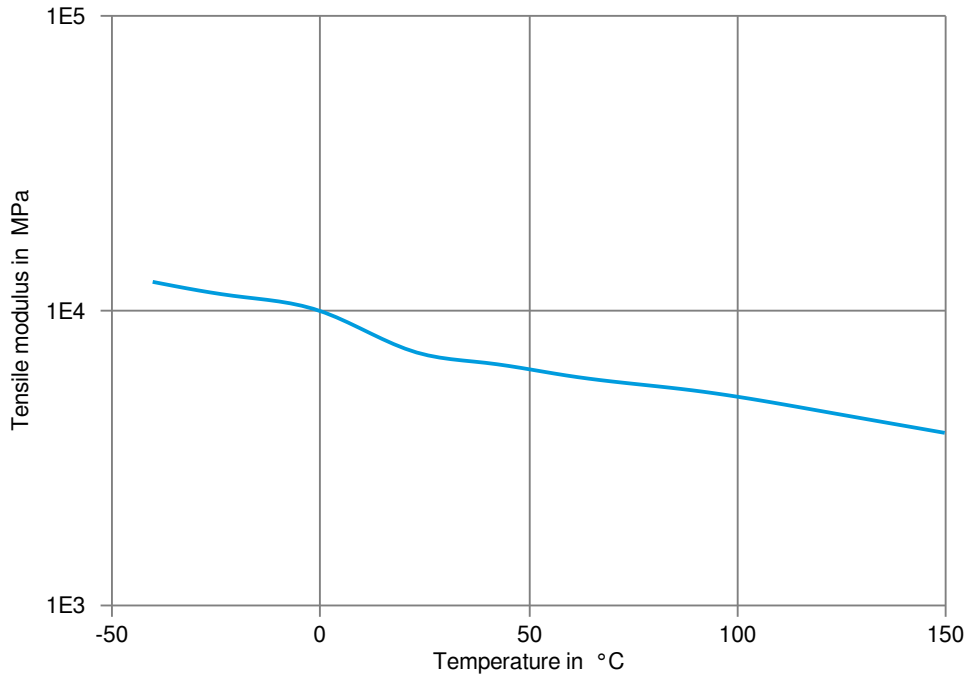
Tensile modulus-temperature (cond.)



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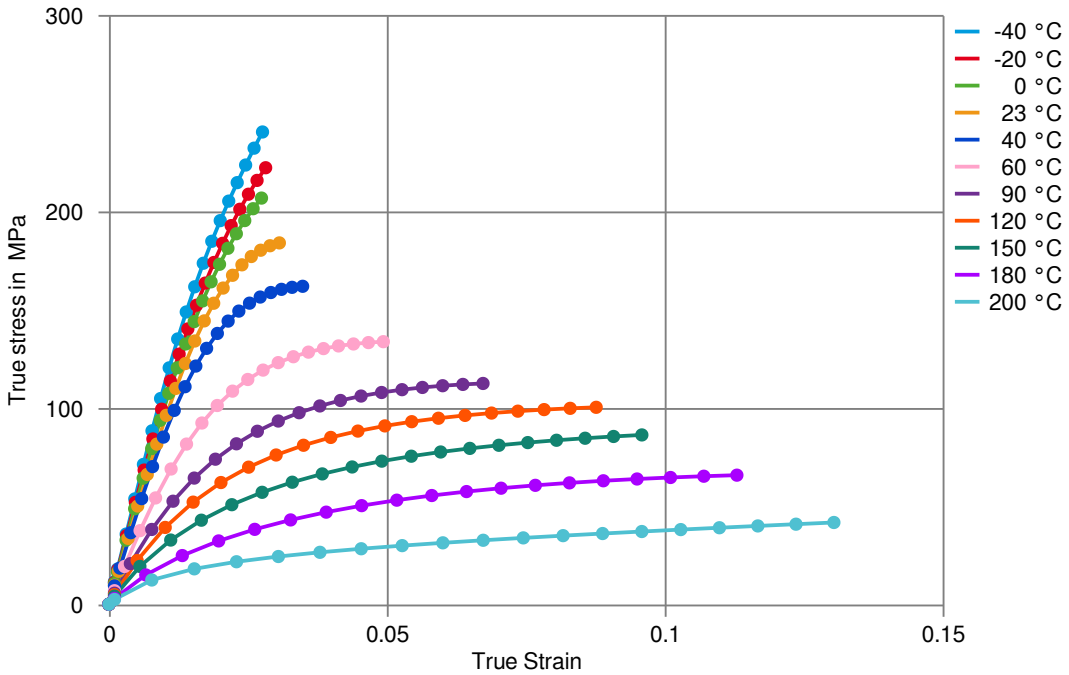
True stress-strain (dry)



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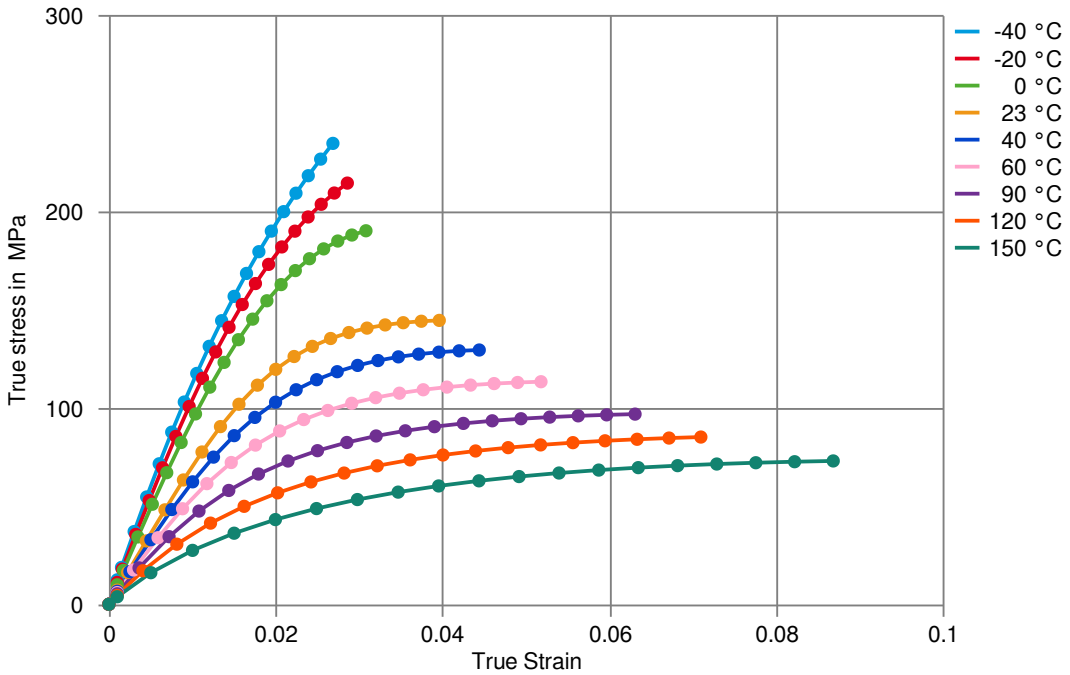
True stress-strain (cond.)



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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).