Zytel® HTNFE8200 NC010

HIGH PERFORMANCE POLYAMIDE RESIN

Product information

Resin Identification	PA6T/XT-HI	ISO 1043
Part Marking Code	>PA6T/XT-HI<	ISO 11469
Part Marking Code	>PPA-I<	SAE J1344
ISO designation	ISO 16396-PA6T/XT-I,,M1G1HNR,S10-020	

Rheological properties

	dry/cond.		
Moulding shrinkage, parallel	0.8 / -	%	ISO 294-4, 2577
Moulding shrinkage, normal	0.9 / -	%	ISO 294-4, 2577

Typical mechanical properties

	dry/cond.		
Tensile modulus	2200 / 2300	MPa	ISO 527-1/-2
Tensile stress at yield, 50mm/min	68 / 68	MPa	ISO 527-1/-2
Tensile strain at yield, 50mm/min	5.5 / 4.4	%	ISO 527-1/-2
Nominal strain at break	14 / 10	%	ISO 527-1/-2
Flexural modulus	2100 / 2200	MPa	ISO 178
Charpy impact strength, 23°C	N / N	kJ/m²	ISO 179/1eU
Charpy impact strength, -30°C	N / N	kJ/m²	ISO 179/1eU
Charpy notched impact strength, 23°C	75 / -	kJ/m²	ISO 179/1eA
Izod notched impact strength, 23°C	75 / -	kJ/m²	ISO 180/1A
Izod notched impact strength, -40°C	18.0 / -	kJ/m²	ISO 180/1A
Poisson's ratio	0.39 / 0.39		

Tribological properties

	dry/cond.		
Coefficient of sliding friction, 1h against steel	- / 0.4		ASTM 1894

Thermal properties

	dry/cond.		
Melting temperature, 10°C/min	300 / *	°C	ISO 11357-1/-3
Melting temperature, first heat	300 / *	°C	ISO 11357-1/-3
Temperature of deflection under load, 1.8 MPa	126 / *	°C	ISO 75-1/-2
Temperature of deflection under load, 0.45 MPa	138 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel, -40-23°C	90 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), parallel	90 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, parallel, 55-160°C	91 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, -40-23°C	72 / *	E-6/K	ISO 11359-1/-2
Coefficient of linear thermal expansion (CLTE), normal	84 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal, 55-160°C	86 / *	E-6/K	ISO 11359-1/-2
Thermal conductivity, flow	0.27	W/(m K)	ISO 22007-2
Thermal conductivity of melt	0.18	W/(m K)	ISO 22007-2
Specific heat capacity of melt	2220	J/(kg K)	ISO 22007-4
RTI, electrical, 0.75mm	85	°C	UL 746B
RTI, electrical, 1.5mm	85	°C	UL 746B
RTI, electrical, 3.0mm	85	°C	UL 746B
RTI, impact, 0.75mm	85	°C	UL 746B

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RTI, impact, 1.5mm	85	°C	UL 746B
RTI, impact, 3.0mm	85	°C	UL 746B
RTI, strength, 0.75mm	85	°C	UL 746B
RTI, strength, 1.5mm	85 / *	°C	UL 746B
RTI, strength, 3.0mm	85	°C	UL 746B

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
UL recognition	yes / *		UL 94
Burning Behav. at thickness h	HB / *	class	IEC 60695-11-10
Thickness tested	0.75 / *	mm	IEC 60695-11-10
UL recognition	yes / *		UL 94
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	1E13 / -	Ohm.m	IEC 62631-3-1
Surface resistivity	* / >1E15	Ohm	IEC 62631-3-2
Comparative tracking index	600 / -		IEC 60112

Physical/Other properties

	dry/cond.		
Humidity absorption, 2mm	1.9 / *	%	Sim. to ISO 62
Water absorption, 2mm	6.3 / *	%	Sim. to ISO 62
Density	1130 / -	kg/m³	ISO 1183
Density of melt	970	kg/m³	

Injection

Drying Recommended	yes	
Drying Temperature	100	°C
Drying Time, Dehumidified Dryer	6 - 8	h
Processing Moisture Content	≤0.1	%
Melt Temperature Optimum	325	°C
Min. melt temperature	320	°C
Max. melt temperature	330	°C
Mold Temperature Optimum	80	°C
Min. mould temperature	60	°C
Max. mould temperature	100	°C
Ejection temperature	245	°C

Characteristics

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

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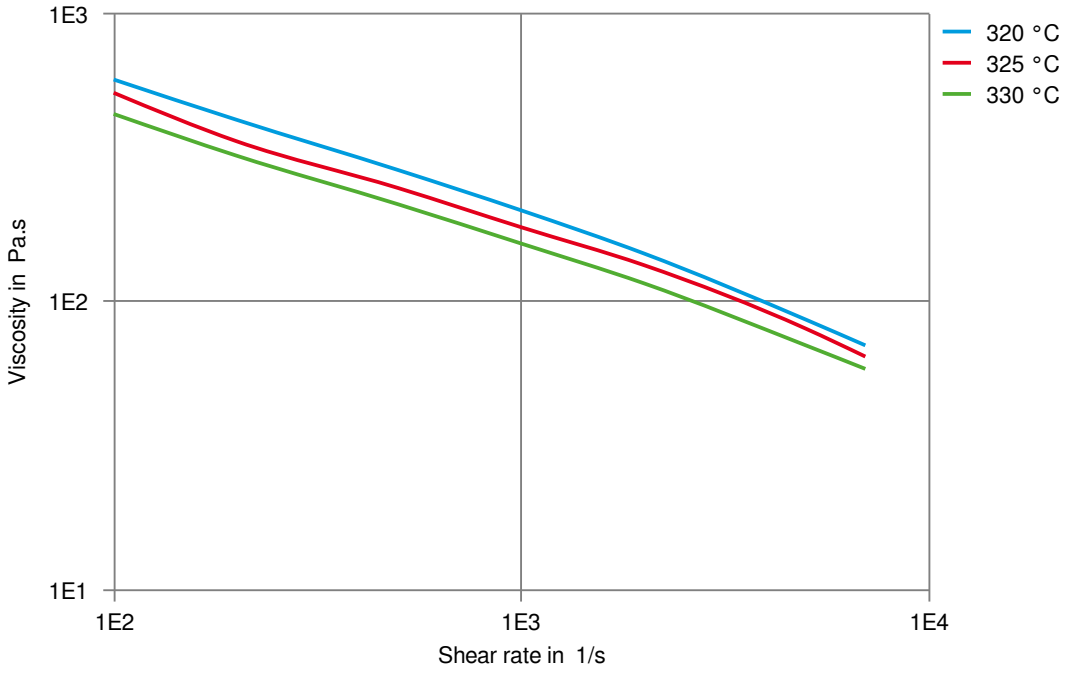
Additional information

Injection molding	During molding, use proper protective equipment and adequate ventilation. Avoid exposure to fumes and limit the hold up time and temperature of the resin in the machine. Purge degraded resin carefully with HDPE.

Automotive

OEM	STANDARD	ADDITIONAL INFORMATION
General Motors	GMW16799P-PPA-T2	Natural
Stellantis - Chrysler	MS.50103 / CPN-5292	Natural

Viscosity-shear rate



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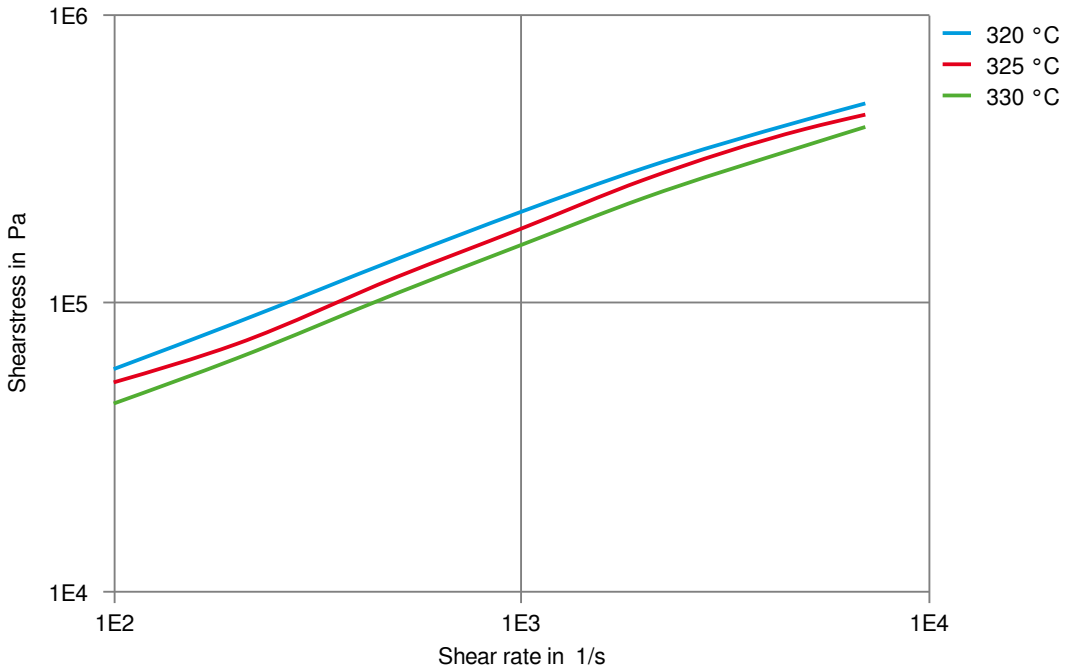
Shearstress-shear rate



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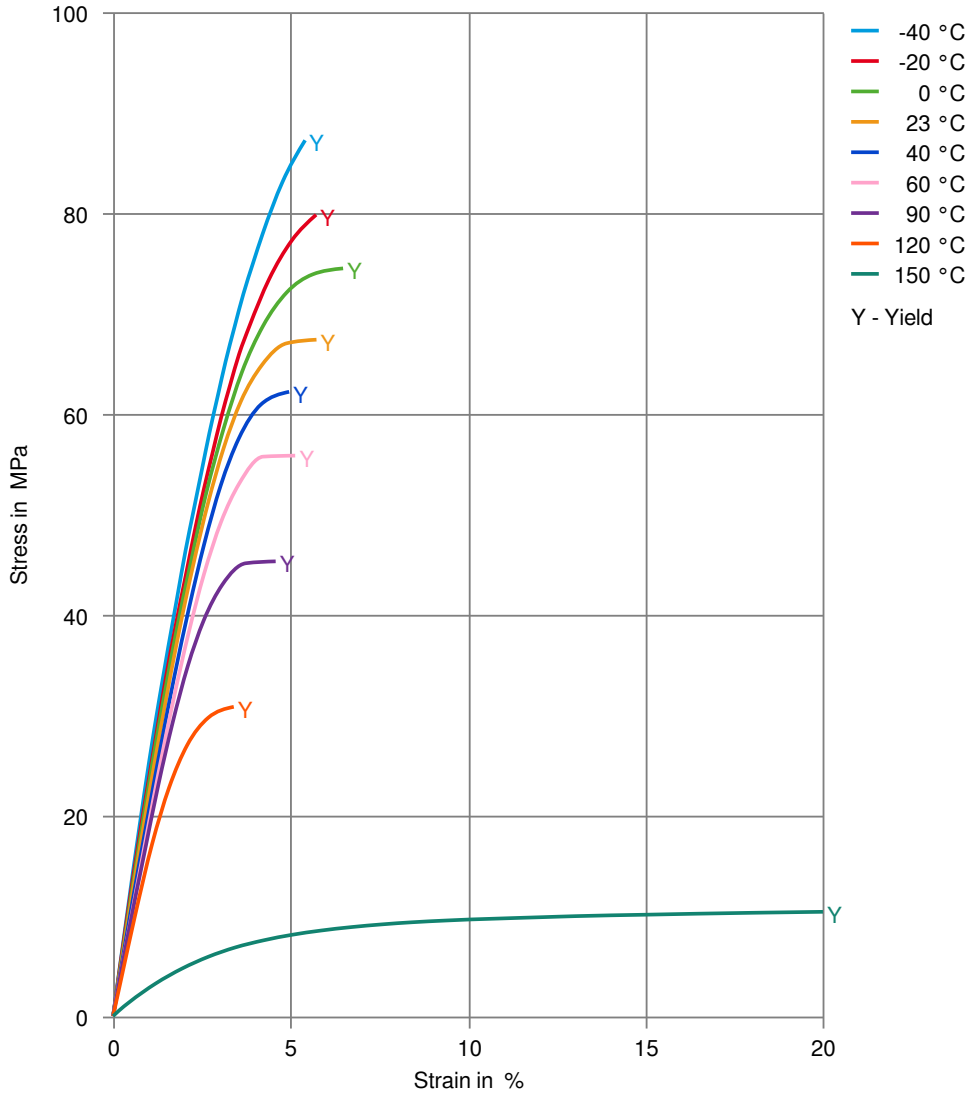
Stress-strain (dry)



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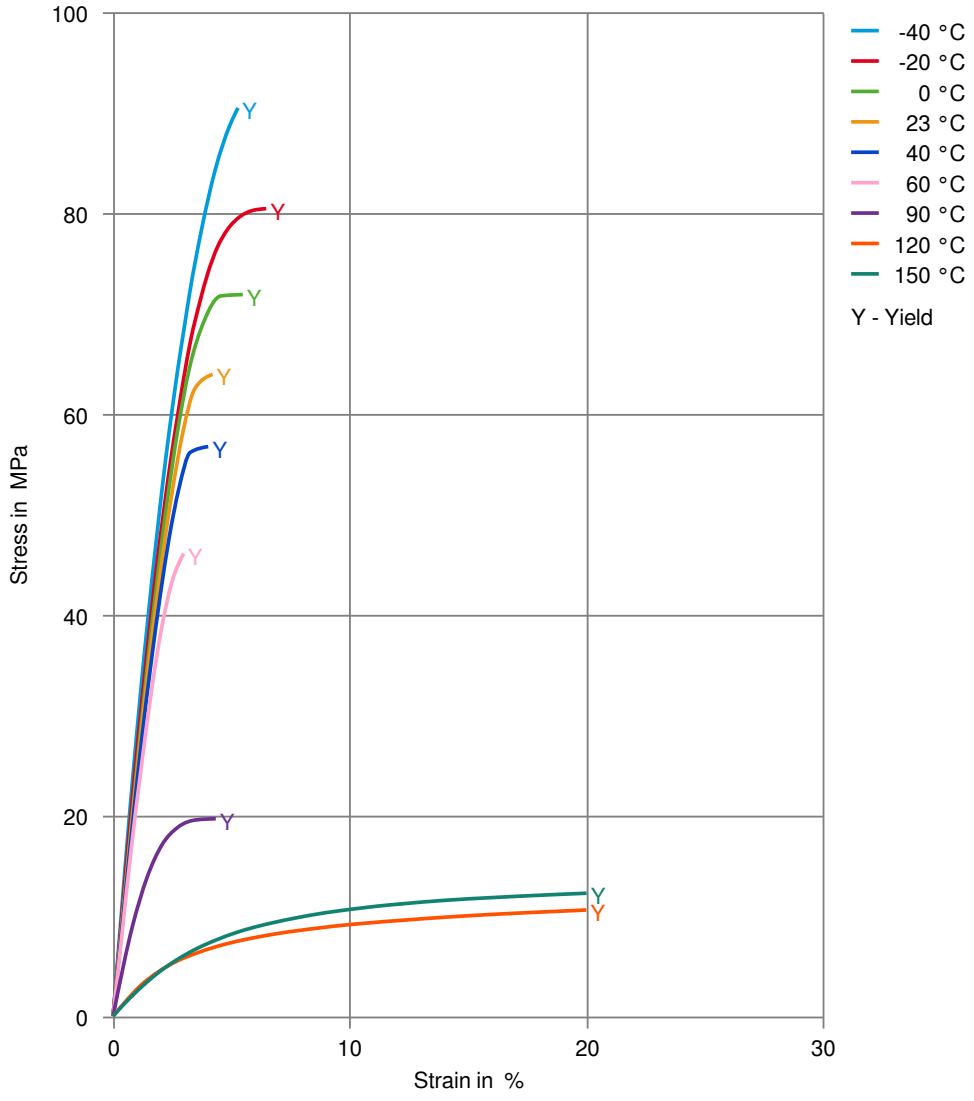
Stress-strain (cond.)



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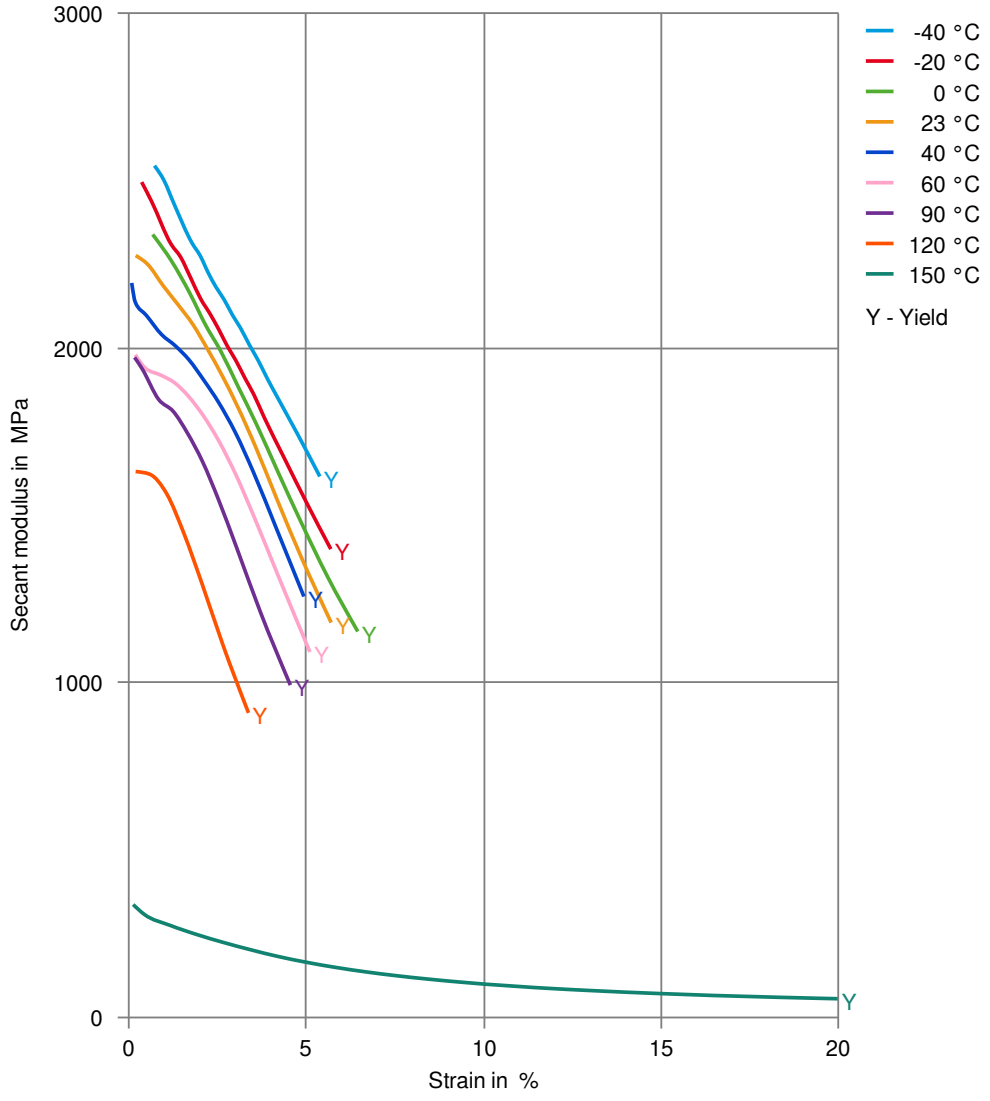
Secant modulus-strain (dry)



Revised: 2024-08-09 Source: Celanese Materials Database

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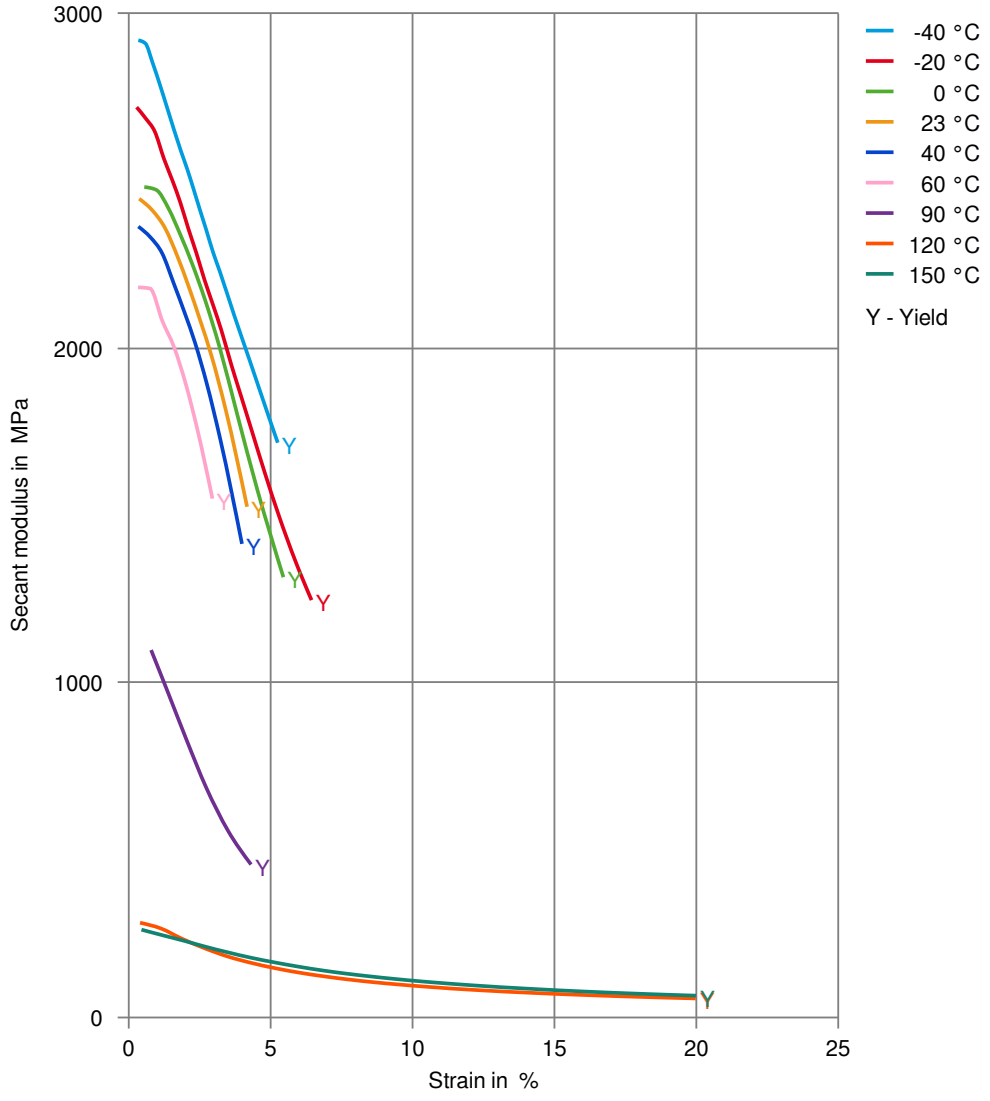
Secant modulus-strain (cond.)



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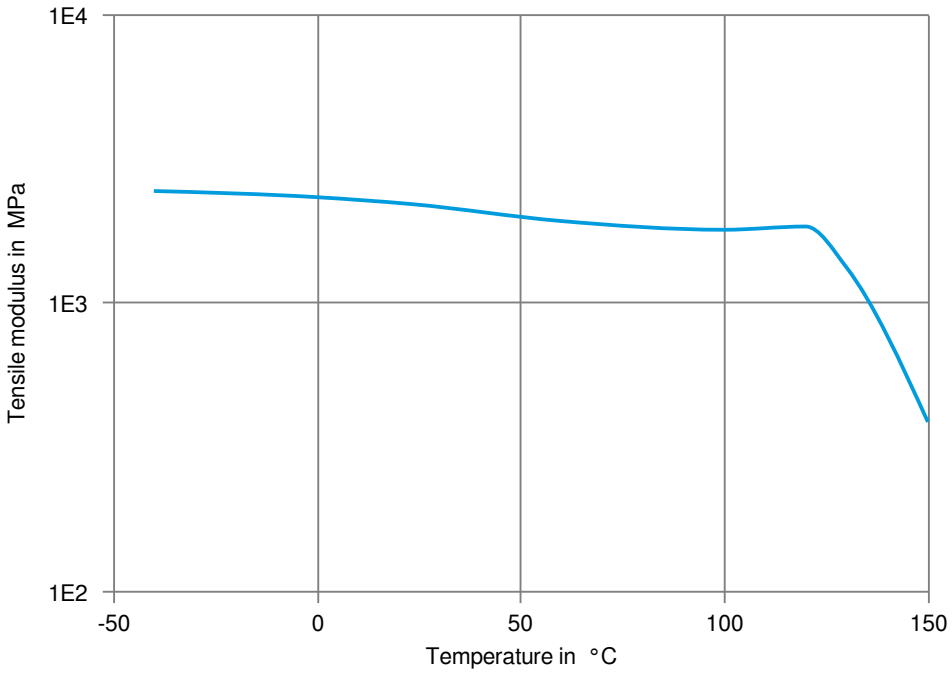
Tensile modulus-temperature (dry)



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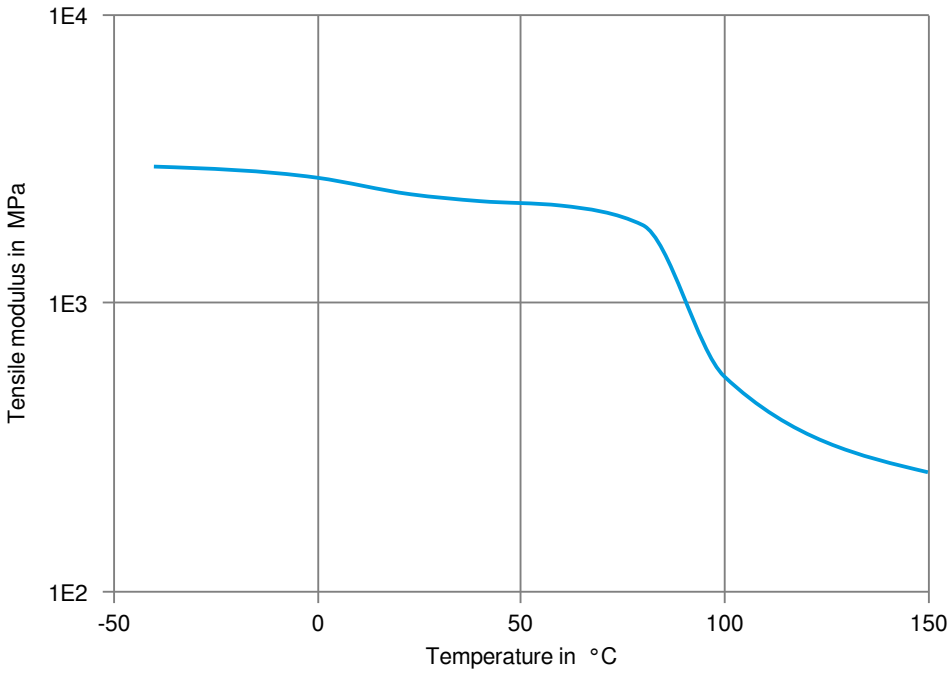
Tensile modulus-temperature (cond.)



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Chemical Media Resistance

Mineral oils

- ✔ SAE 10W40 multigrade motor oil, 23 °C
- ✔ SAE 10W40 multigrade motor oil, 130 °C

Other

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

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