



Zytel® 73G40T NC010 (PRELIMINARY)

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® 73G40T NC010 is a 40% Glass Reinforced, Heat stabilized, Toughened, Polyamide 6 for injection molding

Rheological properties

	dry/cond.		
Molding shrinkage, parallel	0.1/- ^{DS}	%	ISO 294-4, 2577
Molding shrinkage, normal	0.5/- ^{DS}	%	ISO 294-4, 2577

DS: Derived from similar grade

Typical mechanical properties

	dry/cond.		
Tensile Modulus	12000/8500	MPa	ISO 527-1/-2
Stress at break	200/140	MPa	ISO 527-1/-2
Strain at break	3.5/6.5	%	ISO 527-1/-2
Flexural Modulus	11000/8000	MPa	ISO 178
Flexural Strength	300/190	MPa	ISO 178
Charpy impact strength, 73°F	100/100	kJ/m ²	ISO 179/1eU
Charpy impact strength, -22°F	100/100 ^{DS}	kJ/m ²	ISO 179/1eU
Charpy impact strength, -40°F	100/95	kJ/m ²	ISO 179/1eU
Charpy notched impact strength, 73°F	20/23	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -22°F	15/14	kJ/m ²	ISO 179/1eA
Charpy notched impact strength, -40°F	14/14	kJ/m ²	ISO 179/1eA
Poisson's ratio	0.33/0.34	-	

DS: Derived from similar grade

Thermal properties

	dry/cond.		
Melting temperature, 18°F/min	220/*	°C	ISO 11357-1/-3
Temp. of deflection under load, 260 psi	210/*	°C	ISO 75-1/-2
CLTE, Parallel, -40-23°C	15/*	E-6/K	ISO 11359-1/-2
CLTE, Parallel, 55-160°C	17/*	E-6/K	ISO 11359-1/-2
CLTE, Normal, -40-23°C	52/*	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, Normal, 55-160°C	125/*	E-6/K	ISO 11359-1/-2



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Flammability

FMVSS Class	B -	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<80 mm/min	ISO 3795 (FMVSS 302)

Other properties

	dry/cond.		
Humidity absorption, 80mil	1.7/*	%	Sim. to ISO 62
Water absorption, 80mil	5.3/*	%	Sim. to ISO 62
Density	1440/-	kg/m ³	ISO 1183
Water Absorption, Immersion 24h 1: 2mm thickness	1.2/* ¹	%	Sim. to ISO 62

Injection

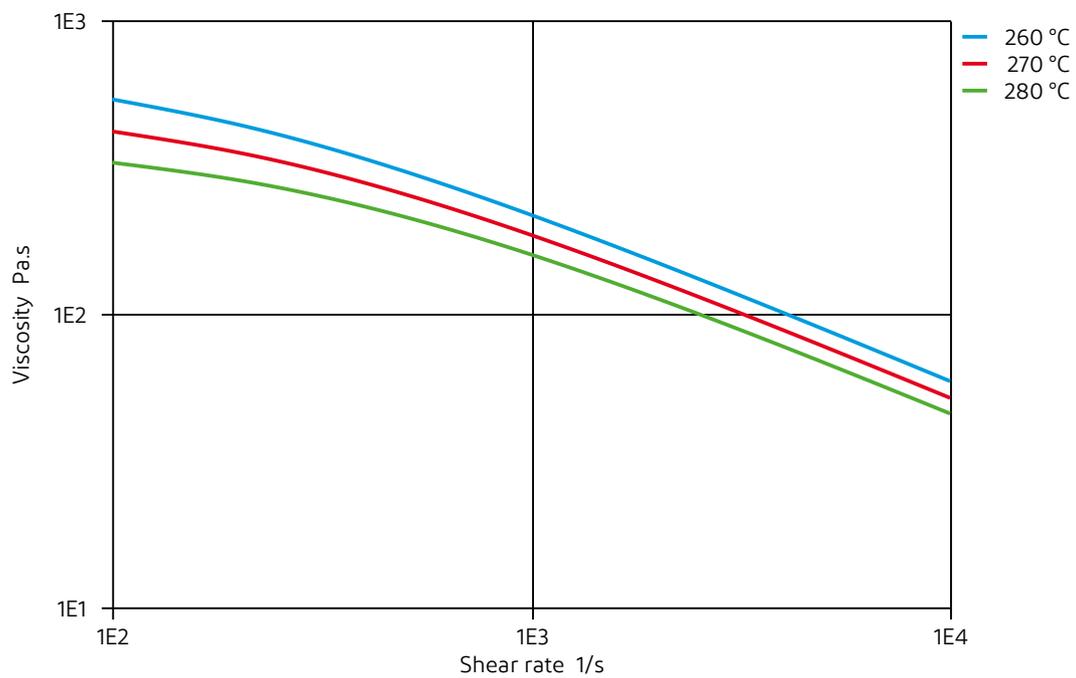
Drying Recommended	yes
Drying Temperature	80 °C
Drying Time, Dehumidified Dryer	2 - 4 h
Processing Moisture Content	≤0.2 %
Melt Temperature Optimum	270 °C
Min. melt temperature	260 °C
Max. melt temperature	280 °C
Max. screw tangential speed	0.2 m/s
Mold Temperature Optimum	100 °C
Min. mold temperature	70 °C
Max. mold temperature	120 °C
Hold pressure range	50 - 100 MPa
Hold pressure time	3 s/mm



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Viscosity-shear rate

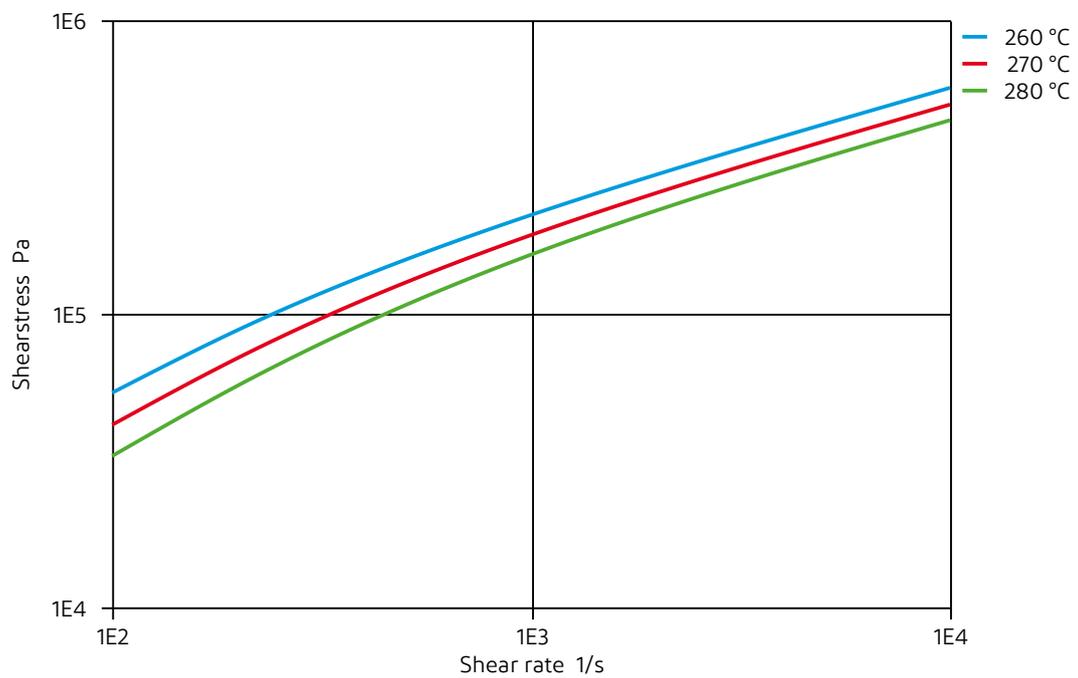




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Shearstress-shear rate

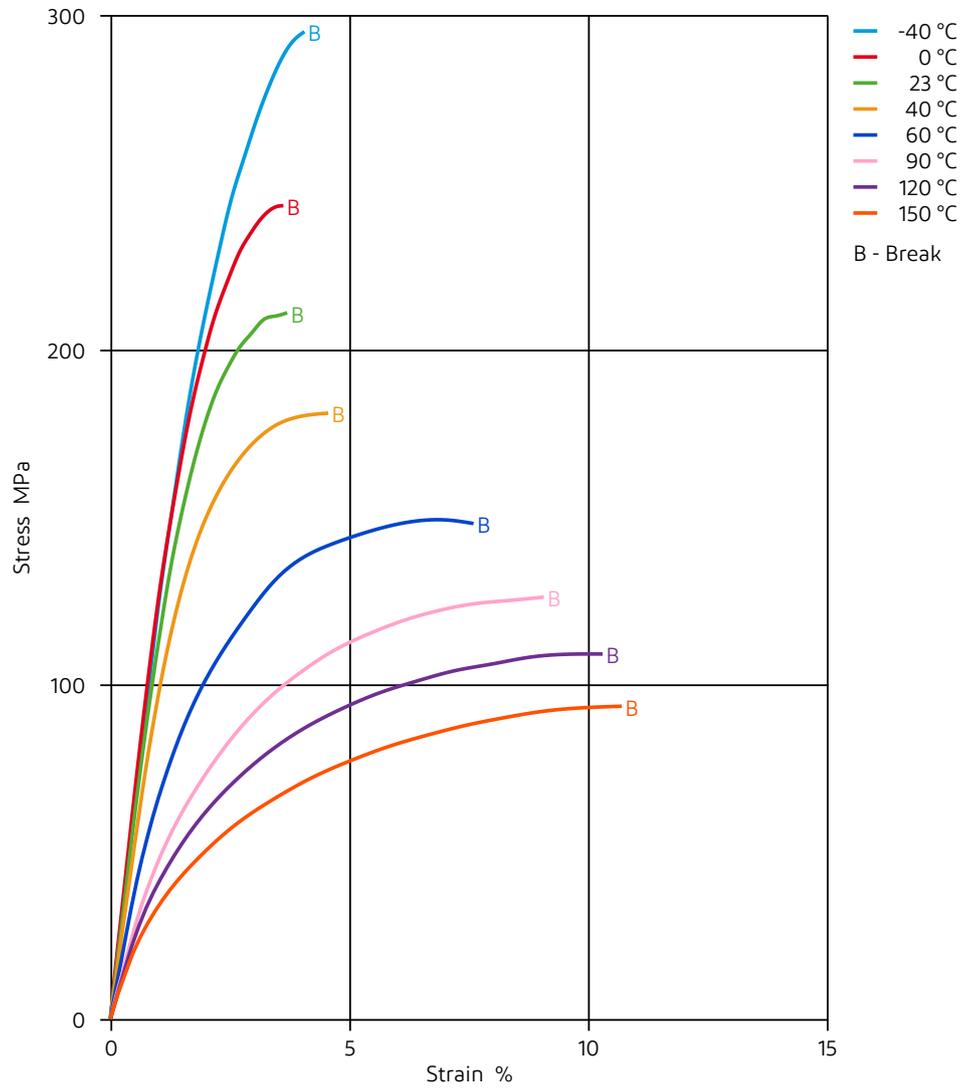




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Stress-strain (dry)

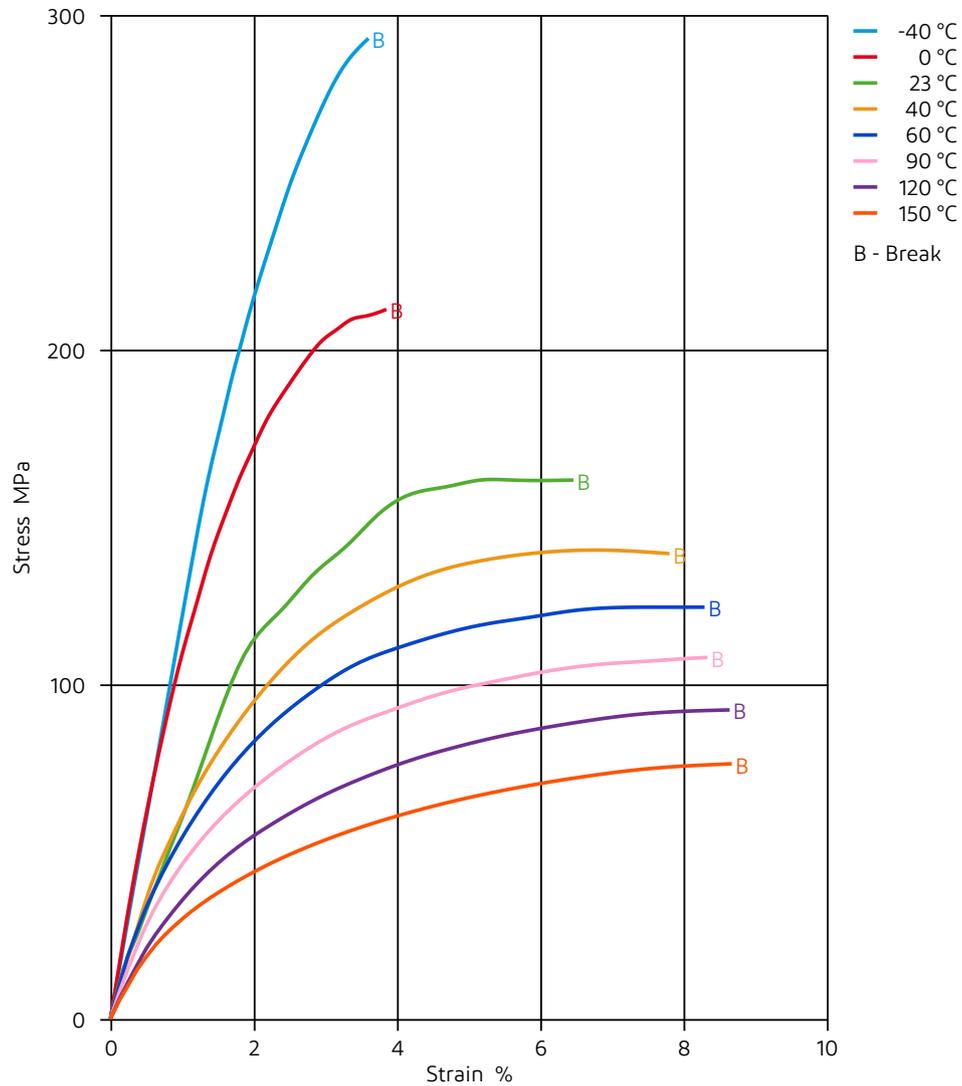




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Stress-strain (cond.)

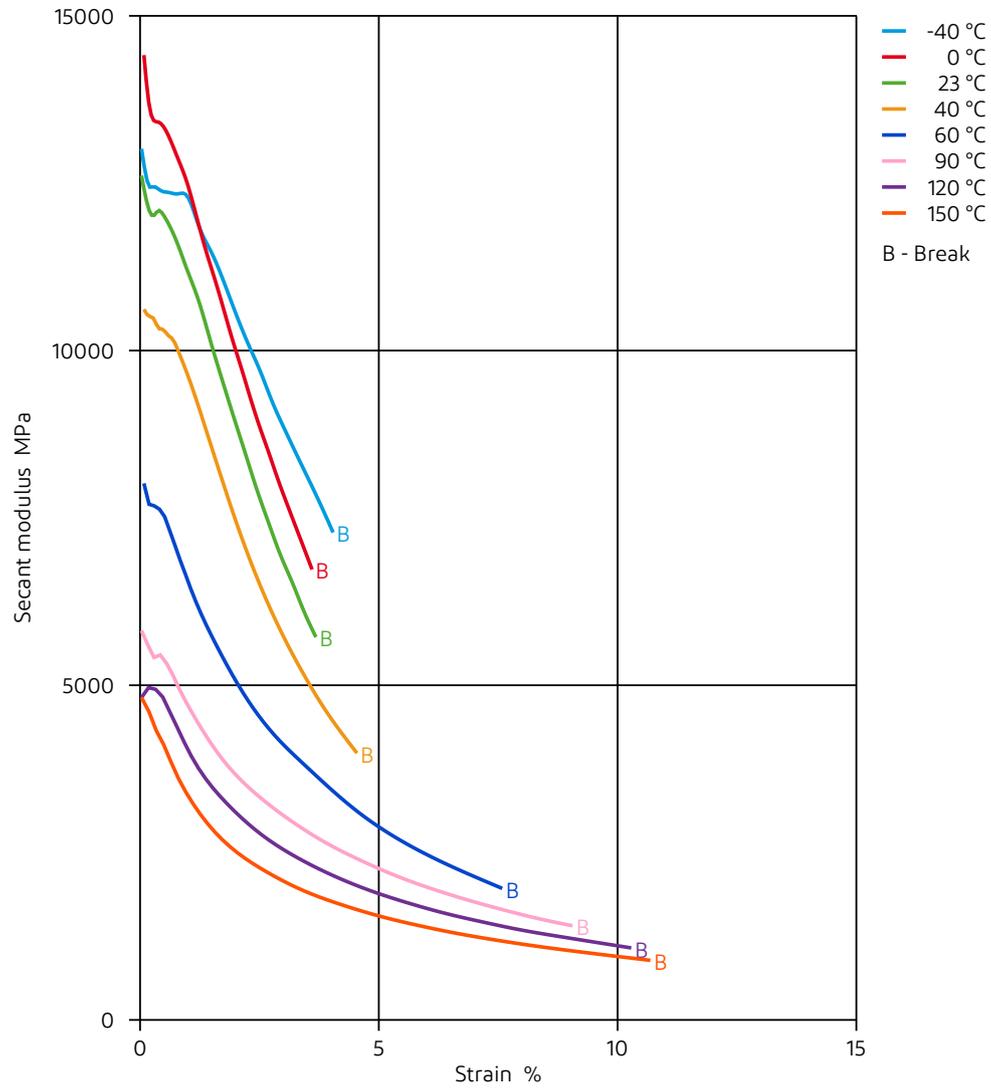




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Secant modulus-strain (dry)

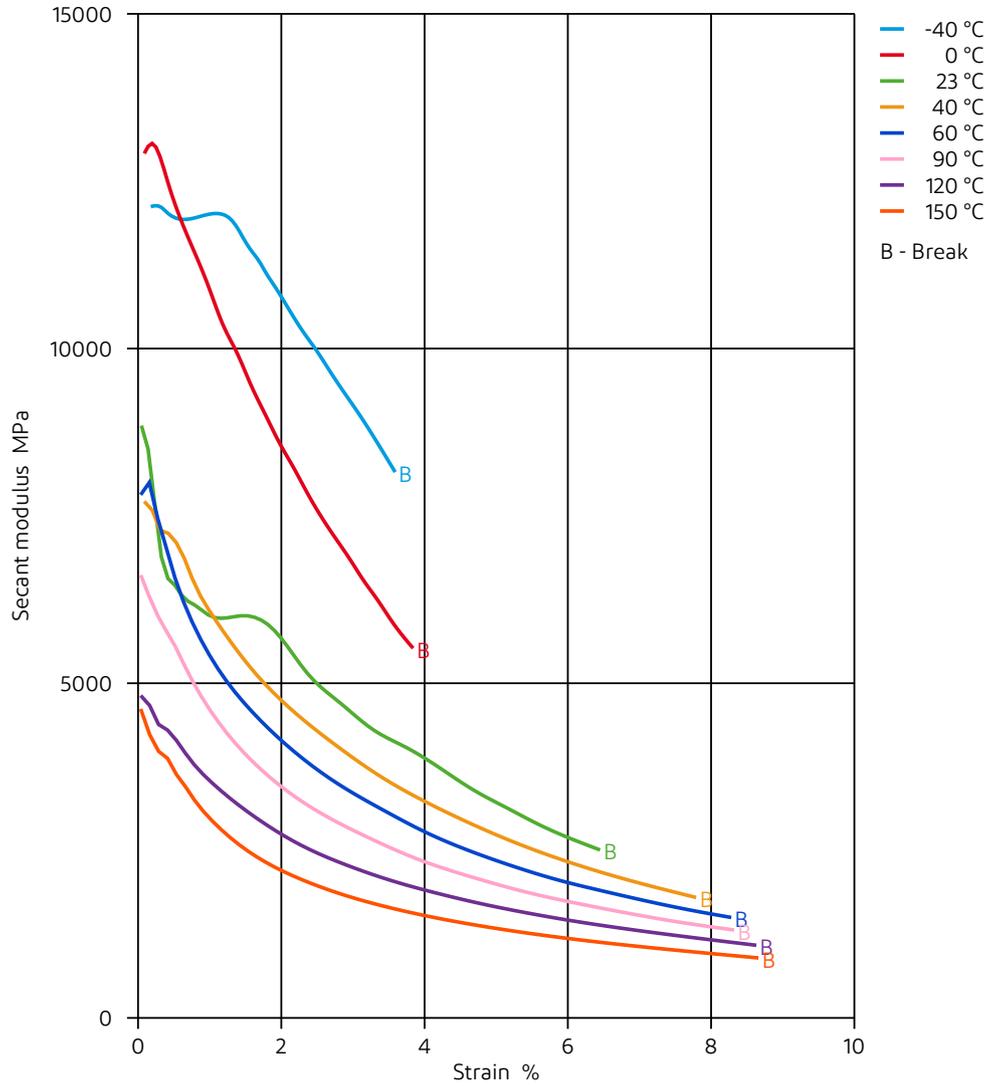




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Secant modulus-strain (cond.)

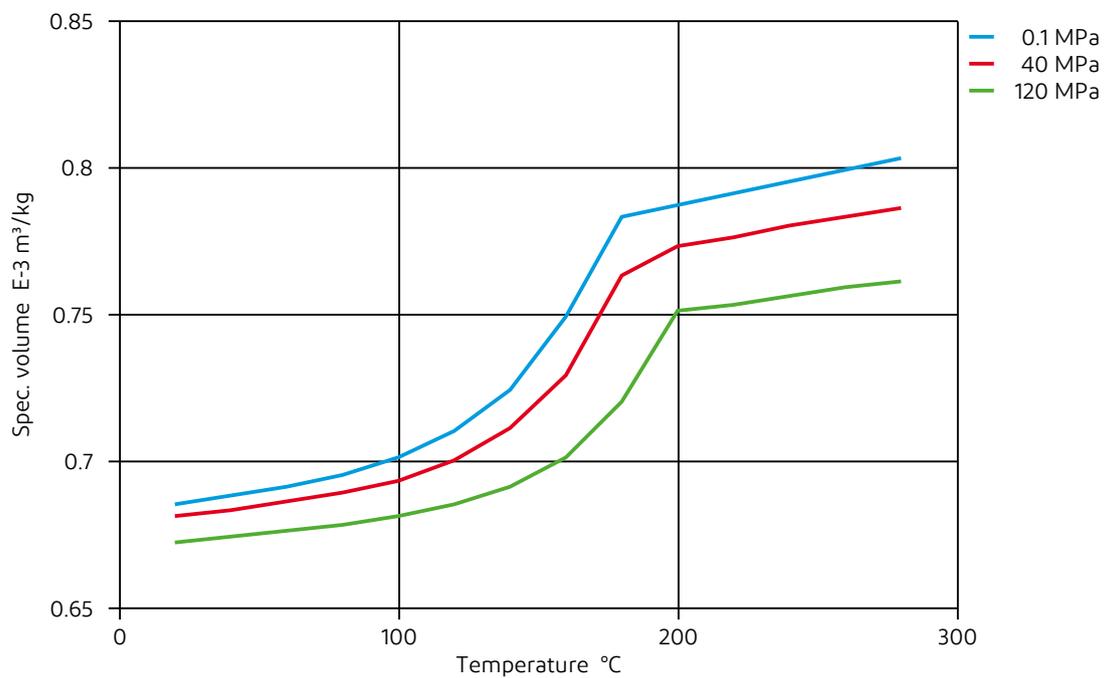




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Specific volume-temperature (pvT)

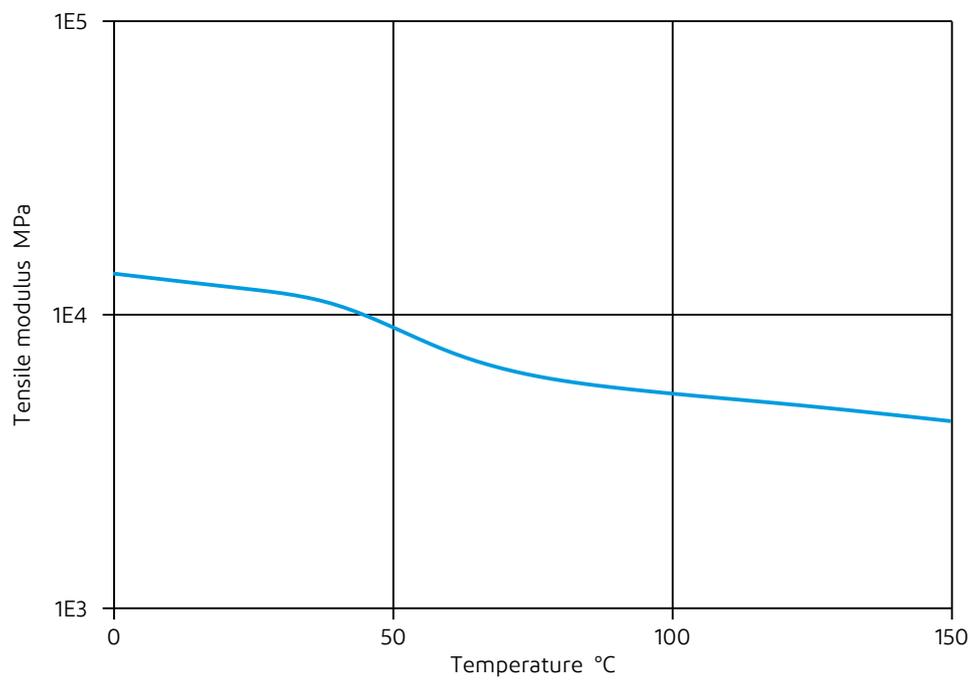




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Tensile modulus-temperature (dry)

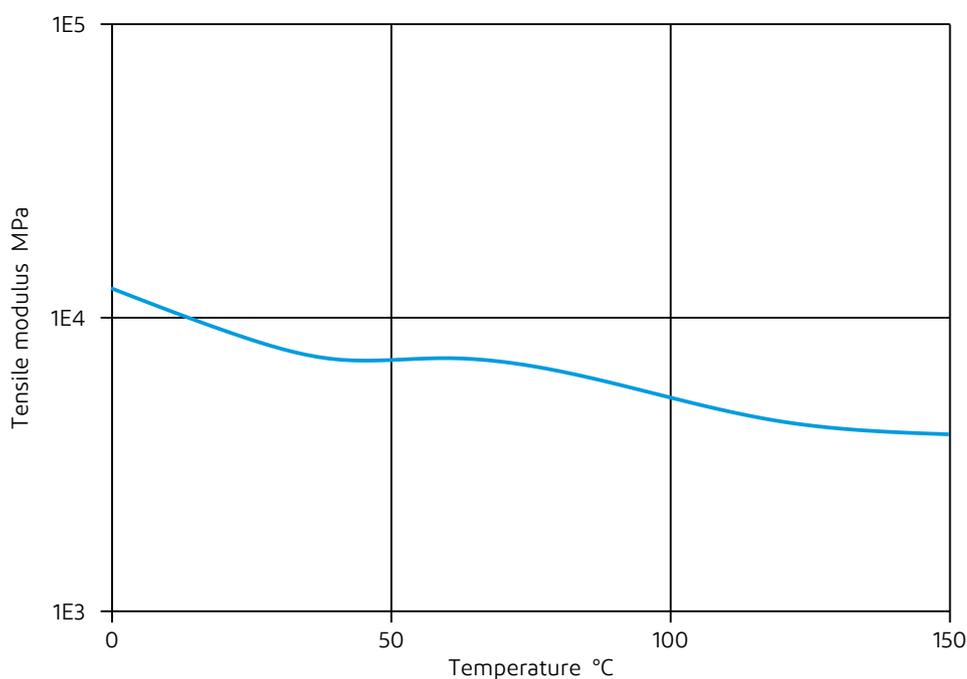




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Tensile modulus-temperature (cond.)



The above data are preliminary and are subject to change as additional data are developed on subsequent lots.

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