

DuPont™ Zytel® PLS93G35DH1 BK549

ZYTEL® PLUS NYLON RESIN

Product Information

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® PLS93G35DH1 is a 35% glass fiber reinforced, DuPont™ SHIELD protected polyamide 6 for injection molding. It provides exceptional welding resistance and excellent heat resistance.

General information	Value	Unit	Test Standard
Resin Identification	PA6-GF35	-	ISO 1043
Part Marking Code	PA6-GF35	-	ISO 11469
Rheological properties	dry / cond	Unit	Test Standard
Molding shrinkage, parallel	0.2 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.7 / -	%	ISO 294-4, 2577
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	12000 / 6500	MPa	ISO 527-1/-2
Stress at break	200 / 120	MPa	ISO 527-1/-2
Strain at break	3.5 / 7	%	ISO 527-1/-2
Charpy impact strength			ISO 179/1eU
73 °F	100 / 90	kJ/m ²	
-22 °F	80 / 80	kJ/m ²	
Charpy notched impact strength			ISO 179/1eA
73 °F	15 / -	kJ/m ²	
-22 °F	13 / -	kJ/m ²	
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, 18 °F/min	224 / *	°C	ISO 11357-1/-3
Temp. of deflection under load			ISO 75-1/-2
260 psi	212 / *	°C	
65 psi	220 / *	°C	
Coeff. of linear therm. expansion, parallel	7 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	100 / *	E-6/K	ISO 11359-1/-2
Thermal conductivity of melt	0.28	W/(m K)	-
Spec. heat capacity of melt	2100	J/(kg K)	-
Flammability	dry / cond	Unit	Test Standard
Burning Behav. at 60mil 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	<100	mm/min	ISO 3795 (FMVSS 302)
Electrical properties	dry / cond	Unit	Test Standard
Volume resistivity	>1E13 / 7E11	Ohm*m	IEC 62631-3-1
Surface resistivity	* / 6E13	Ohm	IEC 62631-3-2
Comparative tracking index	550 / -	-	IEC 60112
Other properties	dry / cond	Unit	Test Standard
Water absorption, 80mil	2 / *	%	Sim. to ISO 62
Density	1400 / -	kg/m ³	ISO 1183
Density of melt	1240	kg/m ³	-

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

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Asia Pacific

Europe/Middle East/Africa

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Injection	dry / cond	Unit	Test Standard
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	-
Ejection temperature	150	°C	-

Characteristics			
Processing	• Injection Molding		
Delivery form	• Pellets		
Additives	• Release agent		
Special characteristics	• Heat stabilized or stable to heat		
Regional Availability	• North America • Europe	• Asia Pacific • South and Central America	• Near East/Africa • Global

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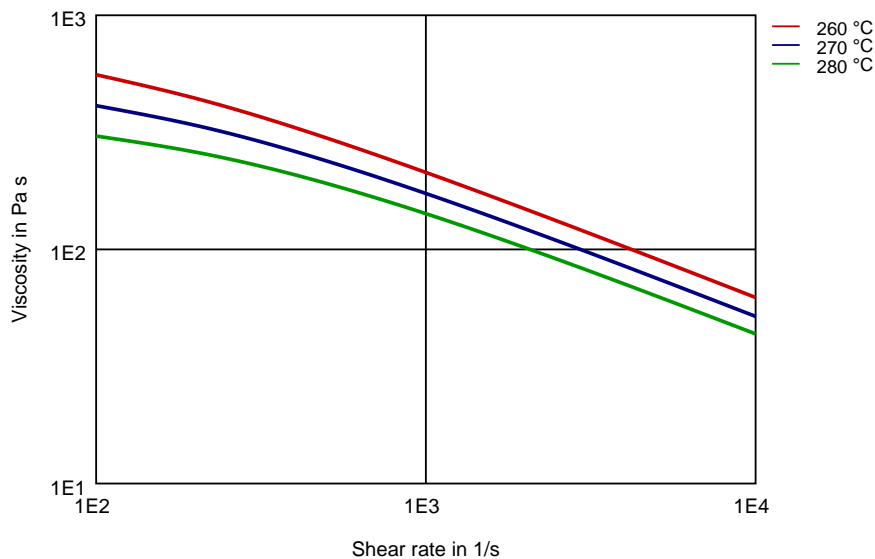


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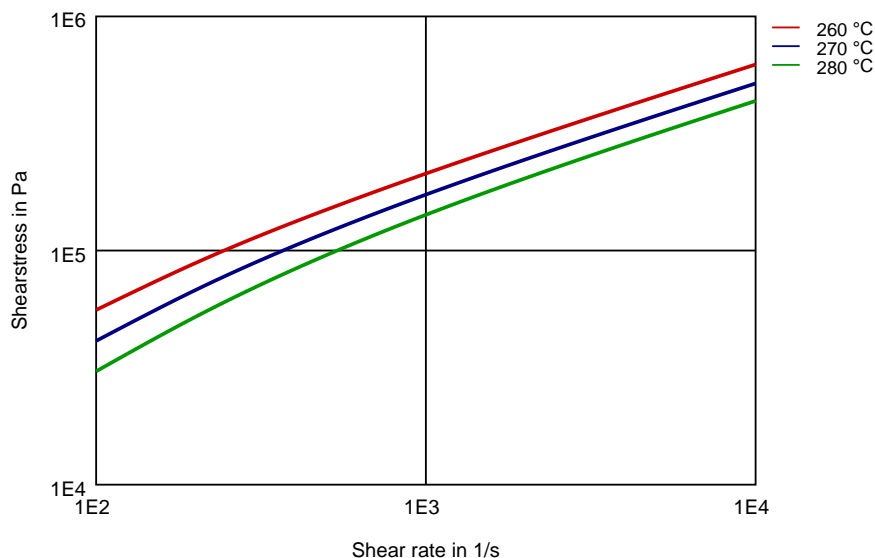
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Diagrams

Viscosity-shear rate



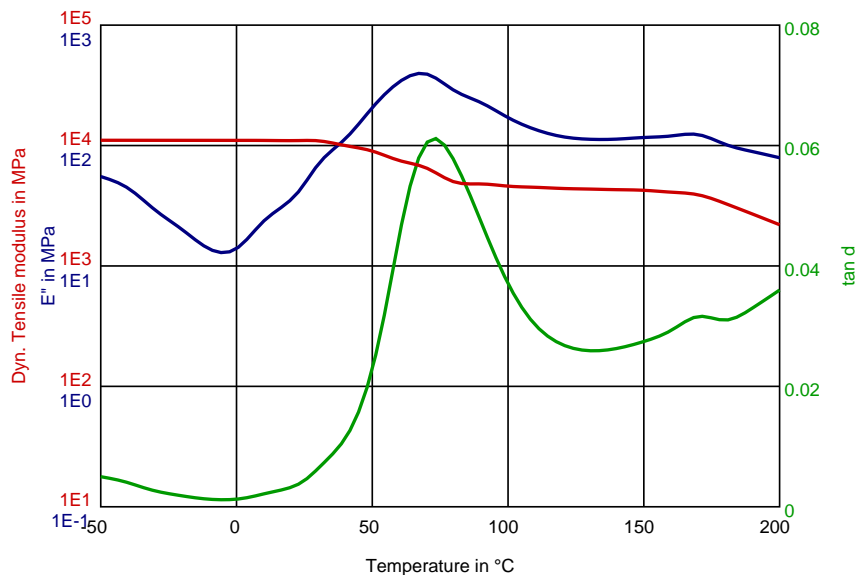
Shearstress-shear rate



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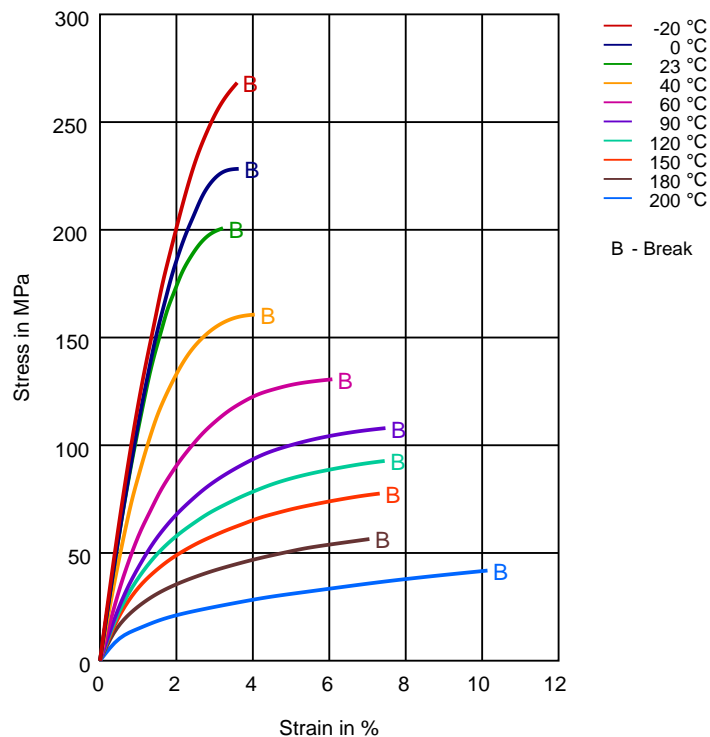
Dynamic Tensile modulus-temperature (dry)



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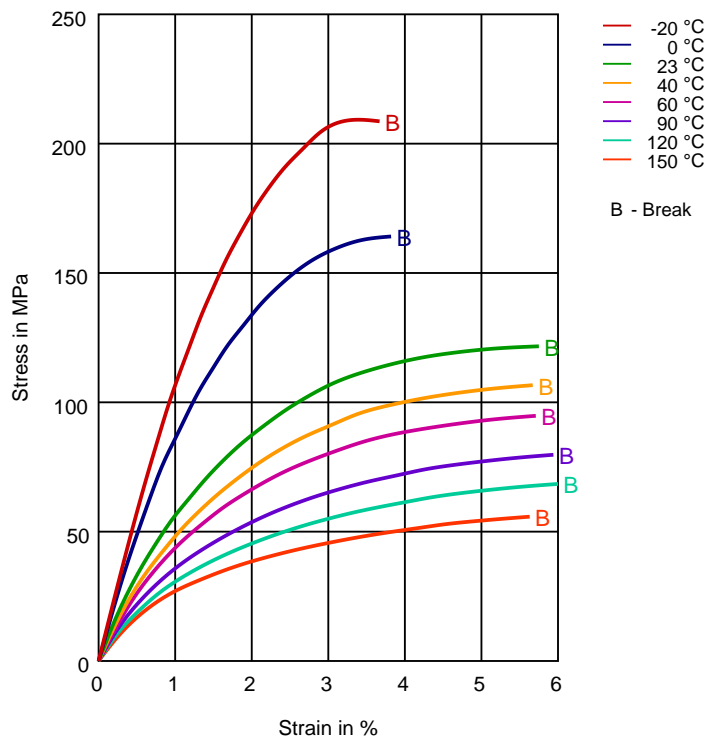
Stress-strain (dry)



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Stress-strain (cond.)



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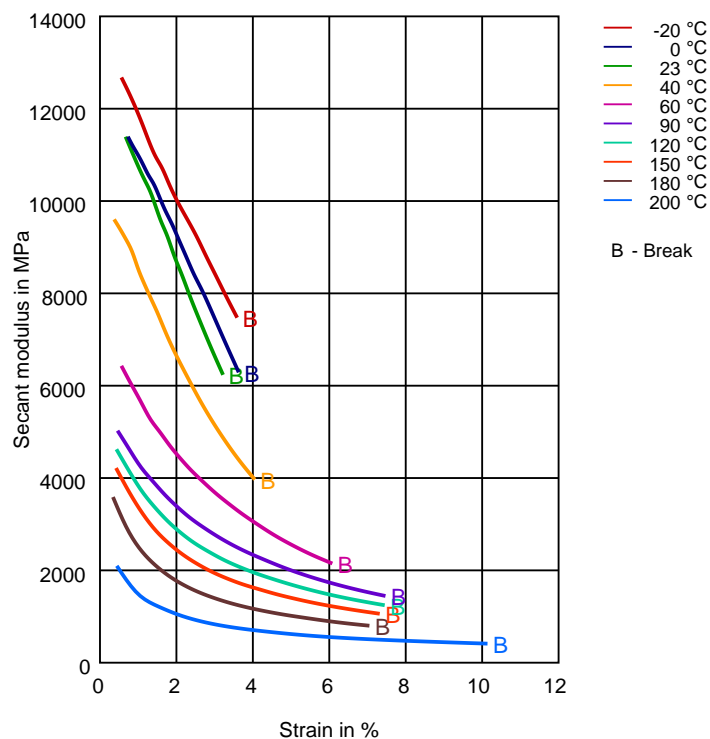
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Secant modulus-strain (dry)



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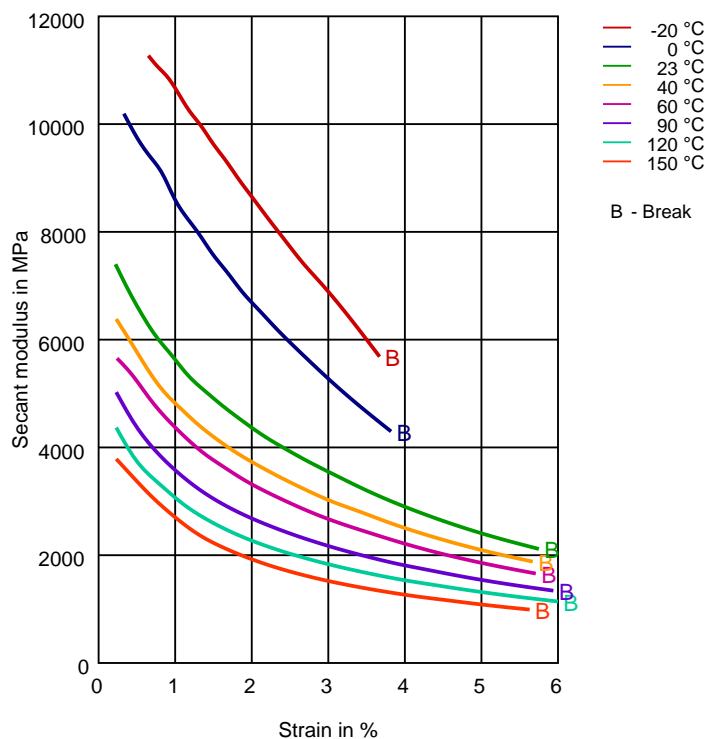
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Secant modulus-strain (cond.)



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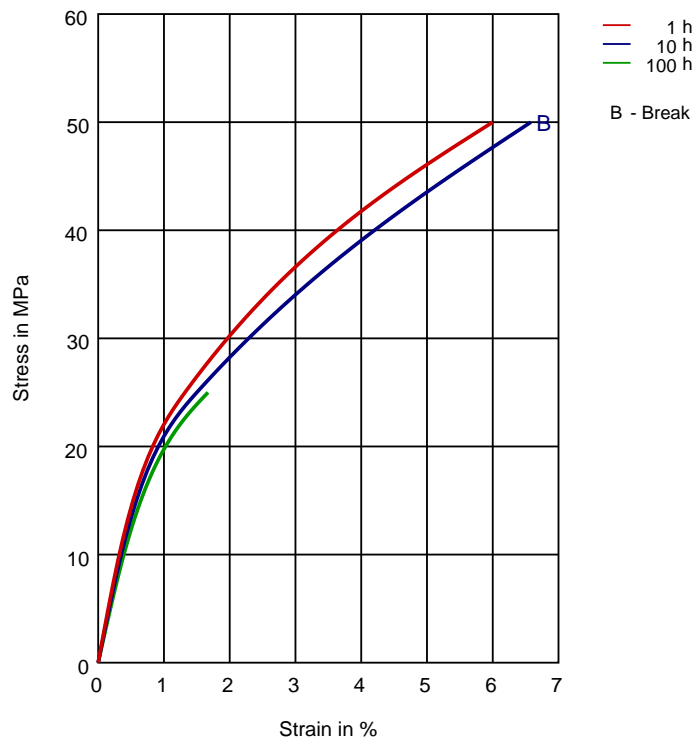
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DuPont™ Zytel® PLS93G35DH1 BK549

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



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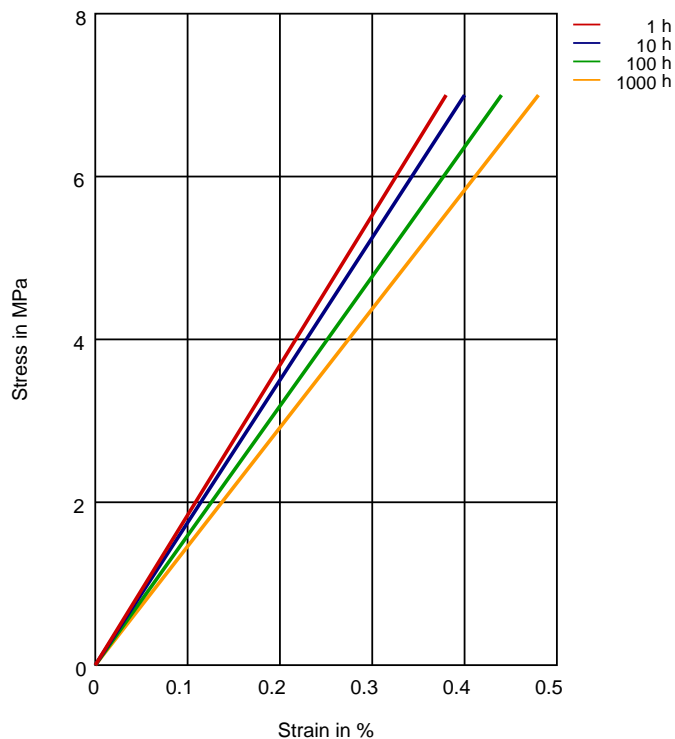
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Stress-strain (isochronous) 200°C (dry)



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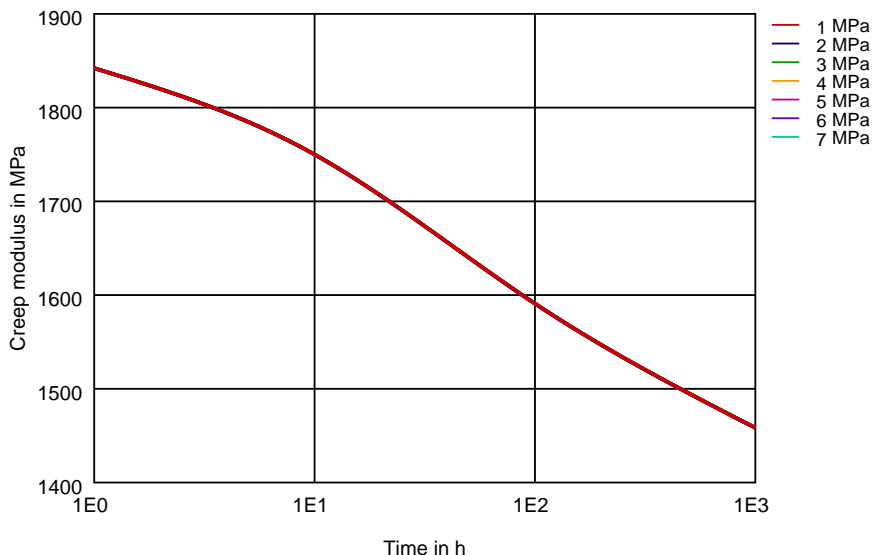
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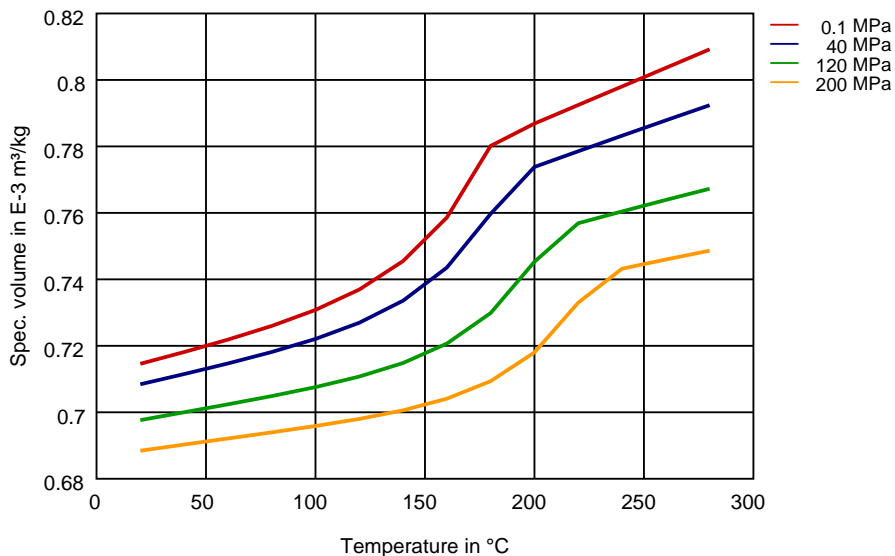
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Creep modulus-time 200°C (dry)



Specific volume-temperature (pvT)



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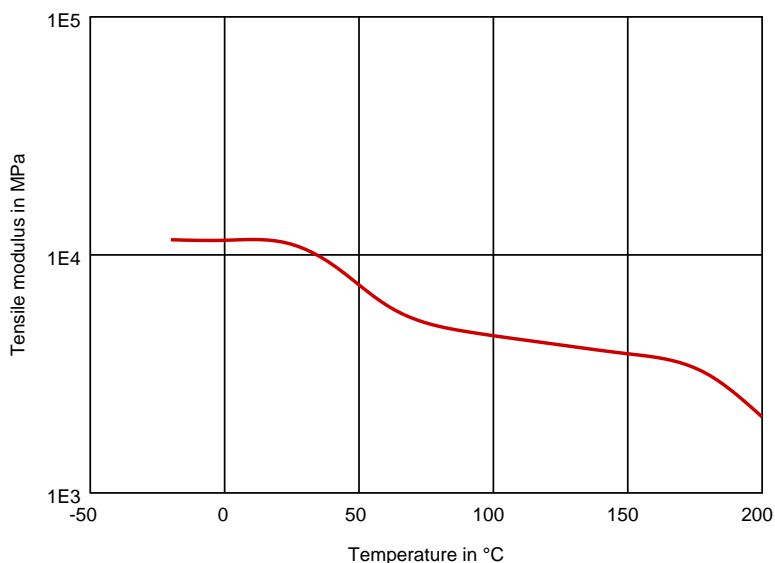
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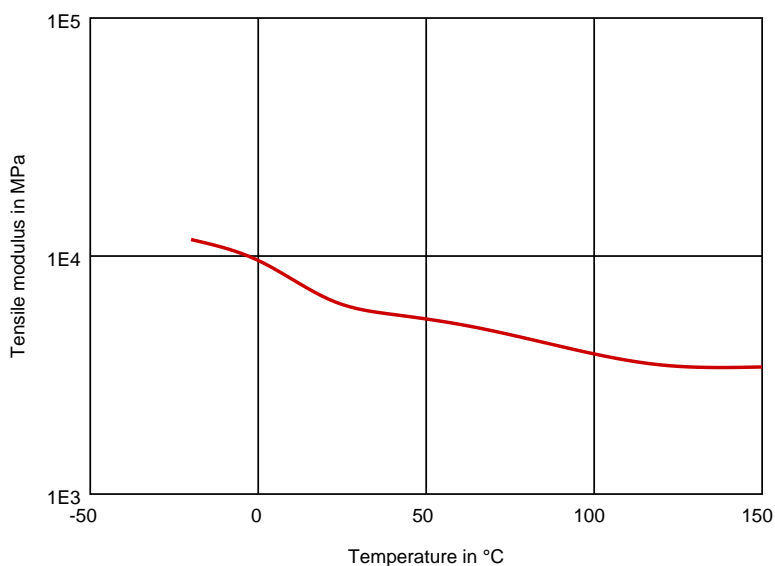
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Tensile modulus-temperature (dry)



Tensile modulus-temperature (cond.)



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Chemical Media Resistance

Mineral oils

✓ SAE 10W40 multigrade motor oil (130°C)

Other

✗ Water (90°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).

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 160 mil (Hytrel® measured at 80 mil), IEC Electrical properties measured at 80 mil, all ASTM properties measured at 120 mil, and test temperatures are 73°F unless otherwise stated.

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