

# DuPont™ Zytel® FE270038 BK267

## 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® FE270038 is a 40% glass fiber/mineral reinforced, heat stabilized Polyamid 66 for injection molding. It is well suited for water injection technology.**

General information	Value	Unit	Test Standard
Resin Identification	PA66-(GF+MD)40	-	ISO 1043
Part Marking Code	PA66-(GF+MD)40	-	ISO 11469
Rheological properties	dry / cond	Unit	Test Standard
Molding shrinkage, parallel	0.3 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.7 / -	%	ISO 294-4, 2577
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	8800 / 7800	MPa	ISO 527-1/-2
Stress at break	145 / 110	MPa	ISO 527-1/-2
Strain at break	2.5 / 2.6	%	ISO 527-1/-2
Tensile creep modulus			ISO 899-1
1h	* / 7000	MPa	
1000h	* / 6000	MPa	
Charpy impact strength			ISO 179/1eU
73 °F	41 / 41	kJ/m <sup>2</sup>	
-22 °F	40 / 40	kJ/m <sup>2</sup>	
Charpy notched impact strength			ISO 179/1eA
73 °F	4 / 4	kJ/m <sup>2</sup>	
-22 °F	4 / 3	kJ/m <sup>2</sup>	
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, 18 °F/min	245 / *	°C	ISO 11357-1/-3
Glass transition temperature, 18 °F/min	90 / -	°C	ISO 11357-1/-2
Temp. of deflection under load, 260 psi	230 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	23 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	60 / *	E-6/K	ISO 11359-1/-2
Thermal conductivity of melt	0.26	W/(m K)	-
Spec. heat capacity of melt	2280	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	8E12 / 2E10	Ohm*m	IEC 60093
Surface resistivity	* / 3E14	Ohm	IEC 60093
Electric strength	41 / 41	kV/mm	IEC 60243-1
Other properties	dry / cond	Unit	Test Standard
Humidity absorption, 80mil	1.5 / *	%	Sim. to ISO 62
Water absorption, 80mil	5 / *	%	Sim. to ISO 62
Density	1460 / -	kg/m <sup>3</sup>	ISO 1183

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

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Density of melt	1300	kg/m <sup>3</sup>	-
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	290	°C	-
Min. melt temperature	280	°C	-
Max. melt temperature	300	°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	210	°C	-

### Characteristics

Processing	• Injection Molding		
Delivery form	• Pellets		
Special characteristics	• Heat stabilized or stable to heat		
Regional Availability	• Europe	• Near East/Africa	

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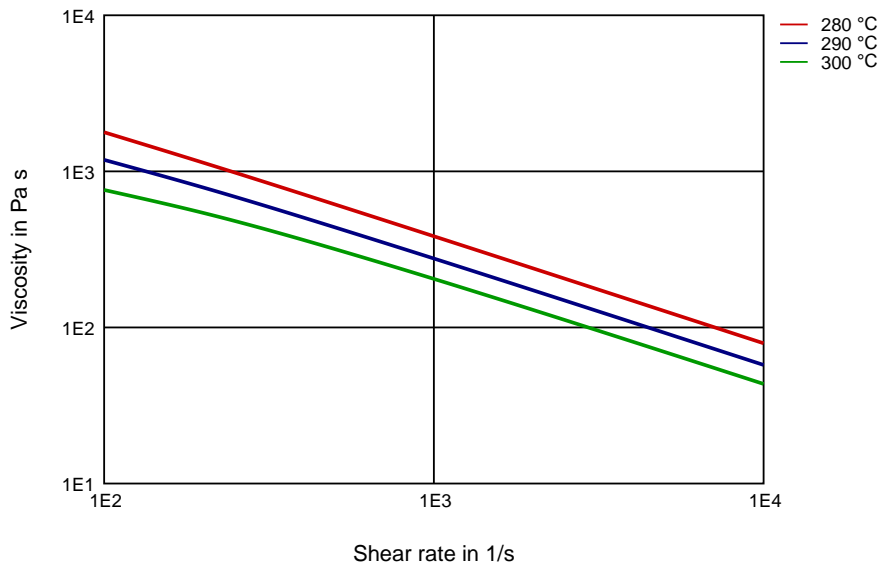


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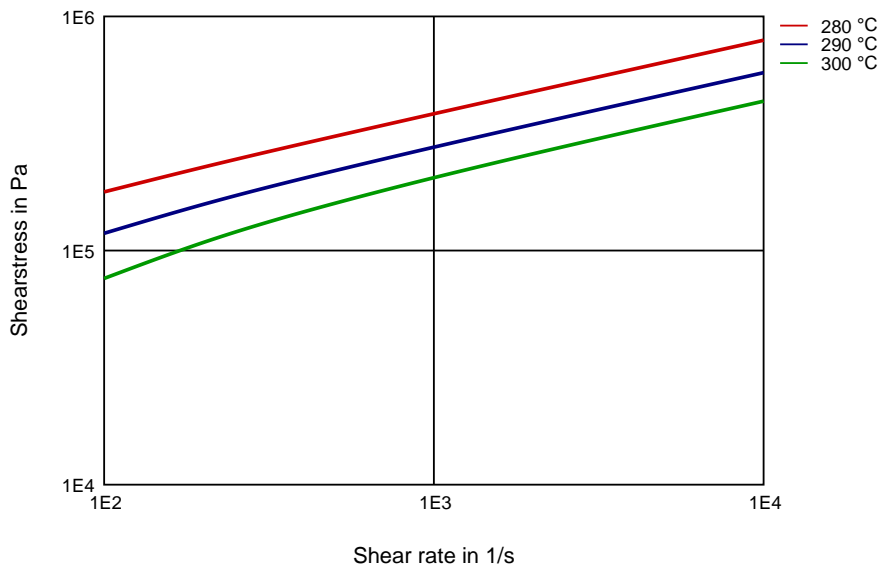
## NYLON RESIN

### Diagrams

#### Viscosity-shear rate



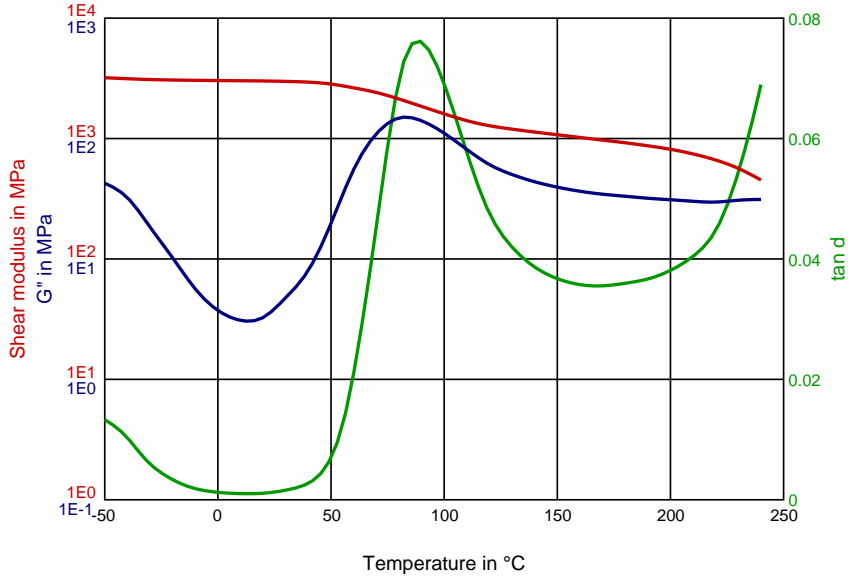
#### Shearstress-shear rate



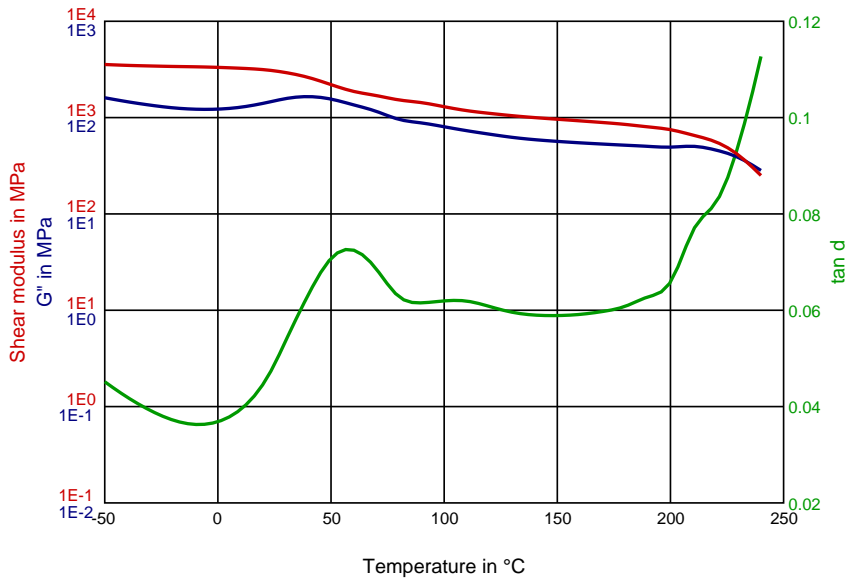
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Dynamic Shear modulus-temperature (dry)



Dynamic Shear modulus-temperature (cond.)



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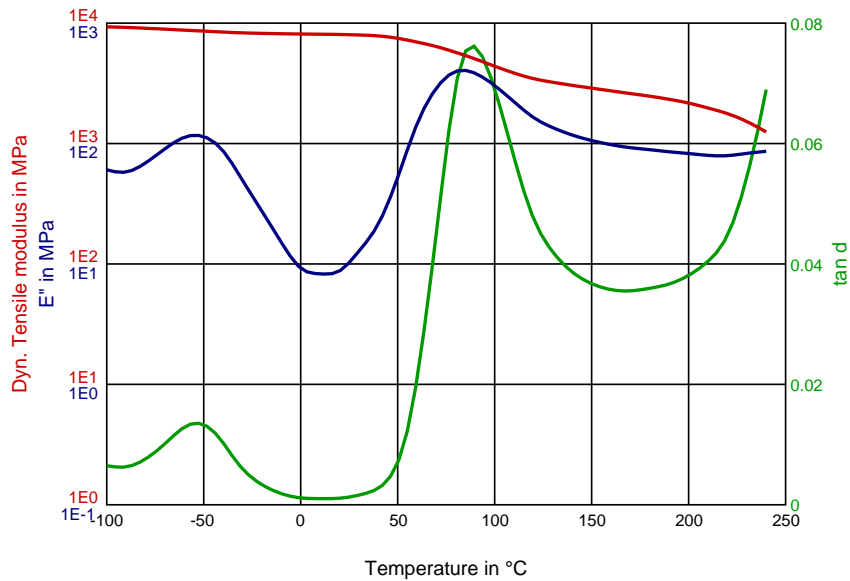
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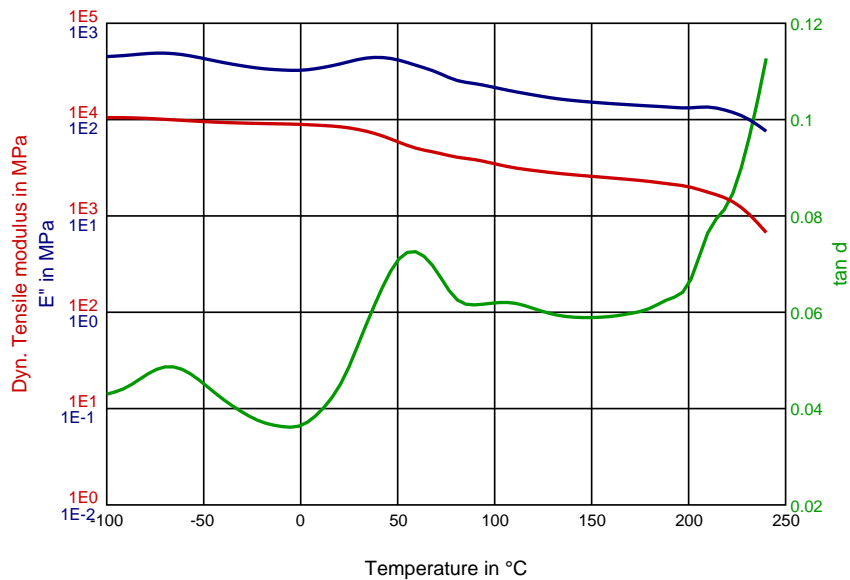
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## NYLON RESIN

Dynamic Tensile modulus-temperature (dry)

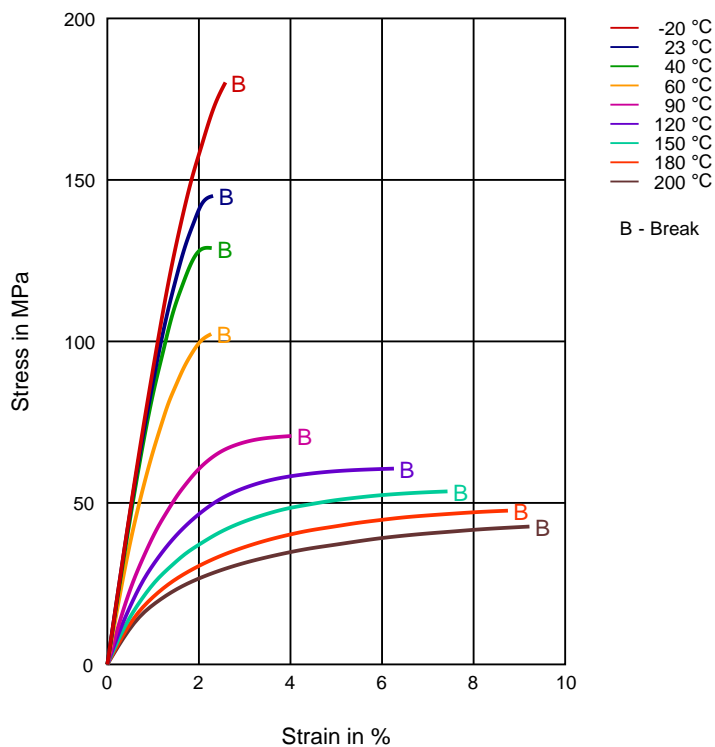


Dynamic Tensile modulus-temperature (cond.)



# DuPont™ Zytel® FE270038 BK267 NYLON RESIN

Stress-strain (dry)



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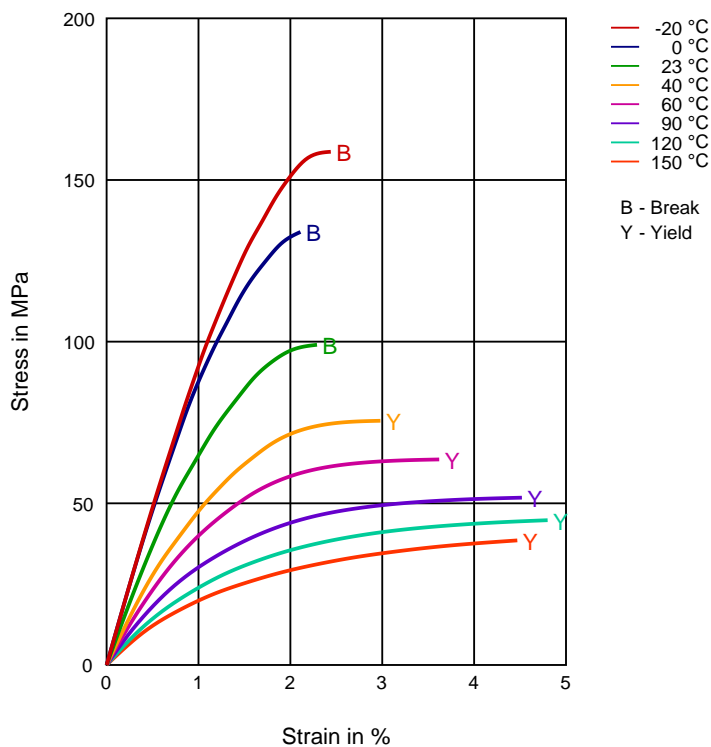
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# DuPont™ Zytel® FE270038 BK267 NYLON RESIN

Stress-strain (cond.)



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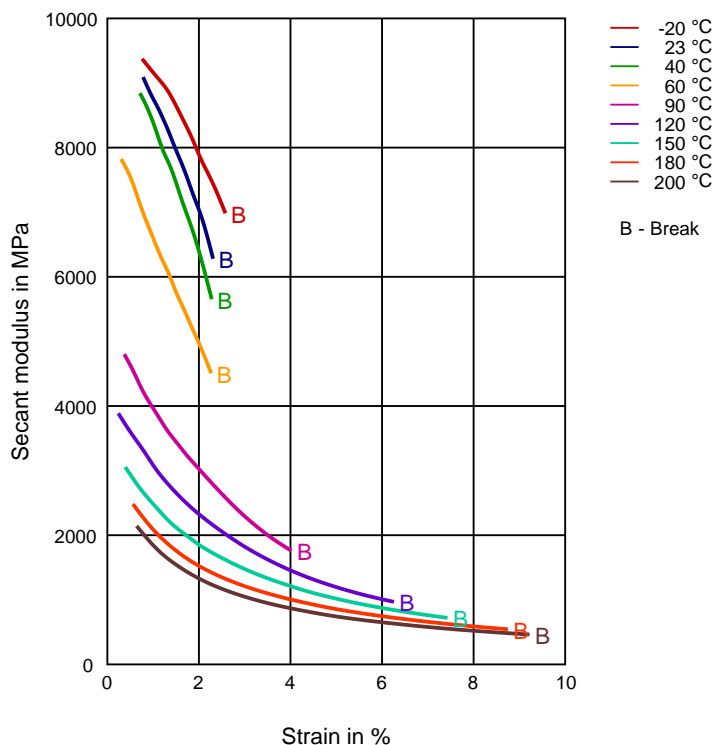
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# DuPont™ Zytel® FE270038 BK267 NYLON RESIN

Secant modulus-strain (dry)



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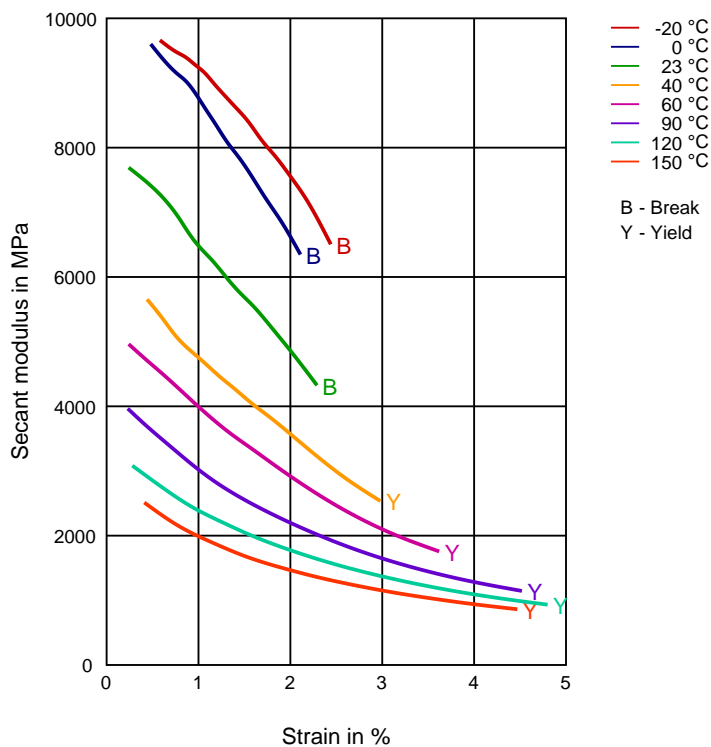




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Secant modulus-strain (cond.)



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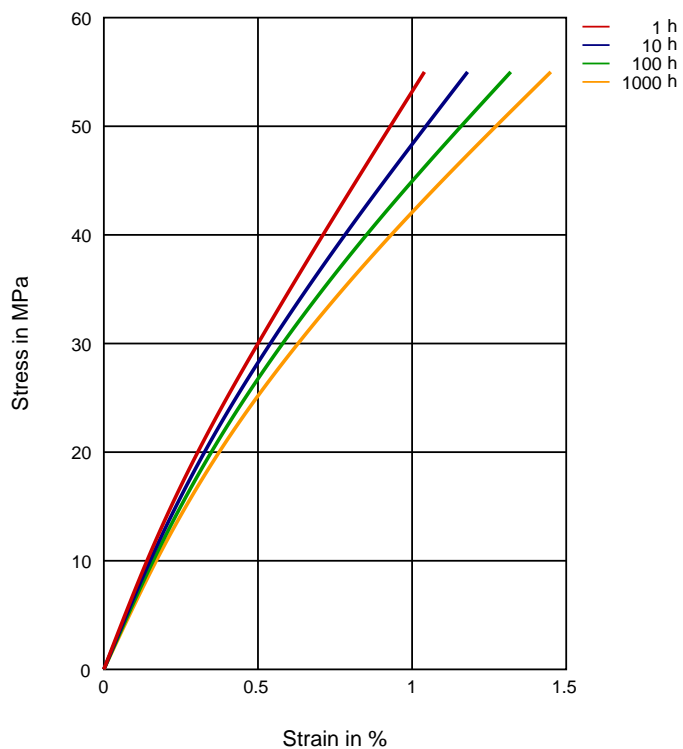
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# DuPont™ Zytel® FE270038 BK267 NYLON RESIN

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



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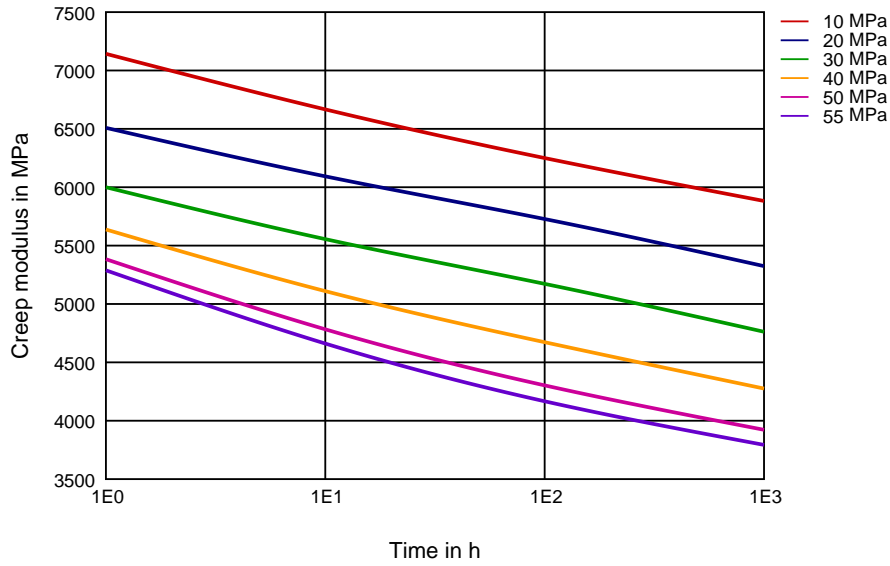
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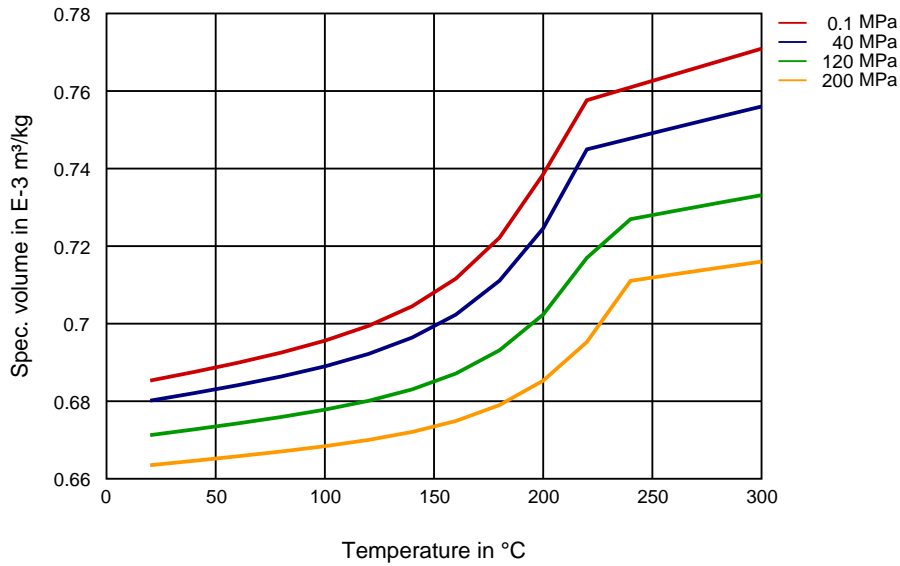
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Creep modulus-time 23 °C (cond.)



Specific volume-temperature (pvT)



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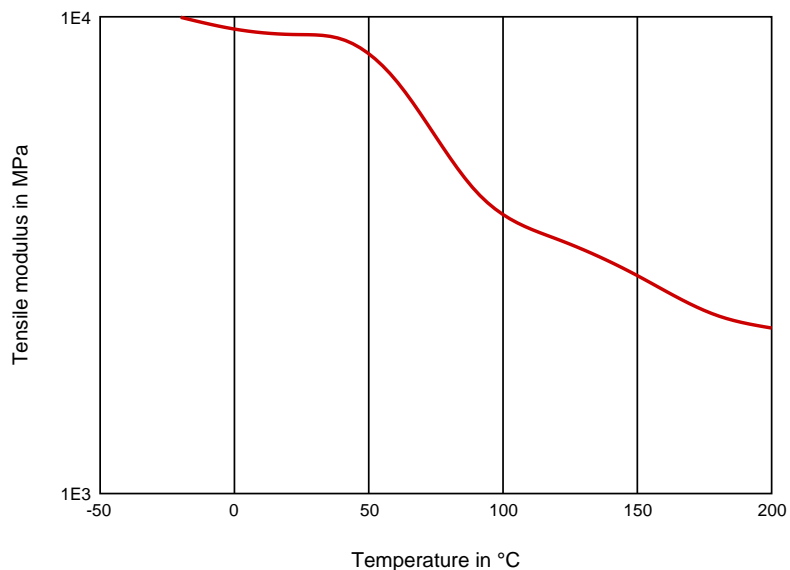
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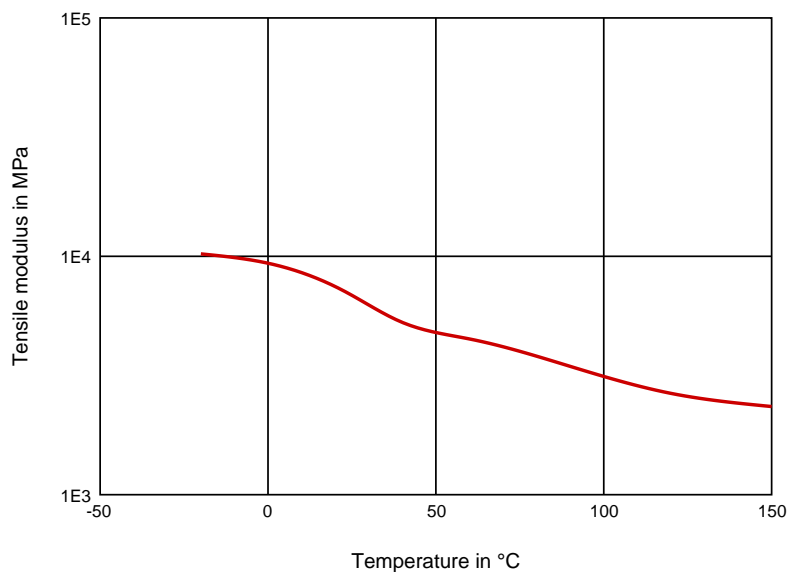
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## NYLON RESIN

Tensile modulus-temperature (dry)



Tensile modulus-temperature (cond.)



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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