

# Zytel® 73G15L NC010

NYLON RESIN

DuPont Performance Polymers

# PROSPECTOR®

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## Technical Data

### Product Description

15% Glass Reinforced Polyamide 6

### General

Material Status	• Commercial: Active
Literature <sup>1</sup>	• Processing - Injection Molding (English) • Processing - Injection Molding of Glass-reinforced Zytel (English) • Typical Processing for DuPont Engineering Polymers (English)
UL Yellow Card <sup>2</sup>	• E41938-234331
Search for UL Yellow Card	• DuPont Performance Polymers • Zytel®
Availability	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Filler / Reinforcement	• Glass Fiber, 15% Filler by Weight
Additive	• Lubricant • Mold Release
RoHS Compliance	• Contact Manufacturer
Automotive Specifications	• CHRYSLER MS-DB-41 CPN4498 • CHRYSLER MS-DB-41 CPN4499 Color: 100% Color Match • FORD WSK-M4D665-A2 • GM GMP.PA6.071 • GM GMW16582P-PA6-GF15
Forms	• Pellets
Processing Method	• Injection Molding
Multi-Point Data	• Isothermal Stress vs. Strain (ISO 11403-1) • Secant Modulus vs. Strain (ISO 11403-1) • Shear Modulus vs. Temperature (ISO 11403-1) • Shear Modulus vs. Temperature, Dynamic (ISO 11403-1) • Tensile Modulus vs. Temperature (ISO 11403-1)
Part Marking Code (ISO 11469)	• PA6-GF15
Resin ID (ISO 1043)	• PA6-GF15

Physical	Dry	Conditioned	Unit	Test Method
Density	1.23	--	g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow	0.80	--	%	
Flow	0.30	--	%	
Water Absorption				ISO 62
Saturation, 73°F (23°C), 0.0787 in (2.00 mm)	7.6	--	%	
Equilibrium, 73°F (23°C), 0.0787 in (2.00 mm), 50% RH	2.5	--	%	

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	870000 (6000)	508000 (3500)	psi (MPa)	ISO 527-2
Tensile Stress (Break)	19600 (135)	10400 (72.0)	psi (MPa)	ISO 527-2
Tensile Strain (Break)	4.0	10	%	ISO 527-2
Flexural Modulus	725000 (5000)	--	psi (MPa)	ISO 178
Poisson's Ratio	0.35	0.37		ISO 527



Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-40°F (-40°C)	2.9 (6.0)	--	ft·lb/in <sup>2</sup> (kJ/m <sup>2</sup> )	
-22°F (-30°C)	2.9 (6.0)	6.7 (14)	ft·lb/in <sup>2</sup> (kJ/m <sup>2</sup> )	
73°F (23°C)	3.3 (7.0)	7.1 (15)	ft·lb/in <sup>2</sup> (kJ/m <sup>2</sup> )	
Charpy Unnotched Impact Strength				ISO 179/1eU
-22°F (-30°C)	21 (45)	26 (54)	ft·lb/in <sup>2</sup> (kJ/m <sup>2</sup> )	
73°F (23°C)	24 (50)	45 (95)	ft·lb/in <sup>2</sup> (kJ/m <sup>2</sup> )	
Notched Izod Impact Strength				ISO 180/1A
-40°F (-40°C)	2.4 (5.0)	--	ft·lb/in <sup>2</sup> (kJ/m <sup>2</sup> )	
-22°F (-30°C)	2.4 (5.0)	--	ft·lb/in <sup>2</sup> (kJ/m <sup>2</sup> )	
73°F (23°C)	2.9 (6.0)	5.7 (12)	ft·lb/in <sup>2</sup> (kJ/m <sup>2</sup> )	
Unnotched Izod Impact Strength				ISO 180/1U
-40°F (-40°C)	19 (40)	--	ft·lb/in <sup>2</sup> (kJ/m <sup>2</sup> )	
73°F (23°C)	21 (45)	--	ft·lb/in <sup>2</sup> (kJ/m <sup>2</sup> )	
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
66 psi (0.45 MPa), Unannealed	428 (220)	--	°F (°C)	ISO 75-2/B
264 psi (1.8 MPa), Unannealed	392 (200)	--	°F (°C)	ISO 75-2/A
Vicat Softening Temperature	419 (215)	--	°F (°C)	ISO 306/B50
Melting Temperature <sup>4</sup>	430 (221)	--	°F (°C)	ISO 11357-3
CLTE				ISO 11359-2
Flow	2.1E-5 (3.7E-5)	--	in/in/°F (cm/cm/°C)	
Transverse	6.1E-5 (1.1E-4)	--	in/in/°F (cm/cm/°C)	
Flammability	Dry	Conditioned	Unit	Test Method
Burning Rate <sup>5</sup> (0.0394 in (1.00 mm))	0.98 (25)	--	in/min (mm/min)	ISO 3795
Flame Rating (0.06 in (1.5 mm))	• • HB HB	--		UL 94 IEC 60695-11-10, -20
Oxygen Index	21	--	%	ISO 4589-2
FMVSS Flammability	B	--		FMVSS 302
Fogging - G-value (condensate)	0.0	--	g	ISO 6452
Fill Analysis	Dry	Conditioned	Unit	
Melt Density	1.07	--	g/cm <sup>3</sup>	
Specific Heat Capacity of Melt	0.590 (2470)	--	Btu/lb/°F (J/kg/°C)	
Thermal Conductivity of Melt	1.3 (0.19)	--	Btu·in/hr/ft <sup>2</sup> /°F (W/m/K)	

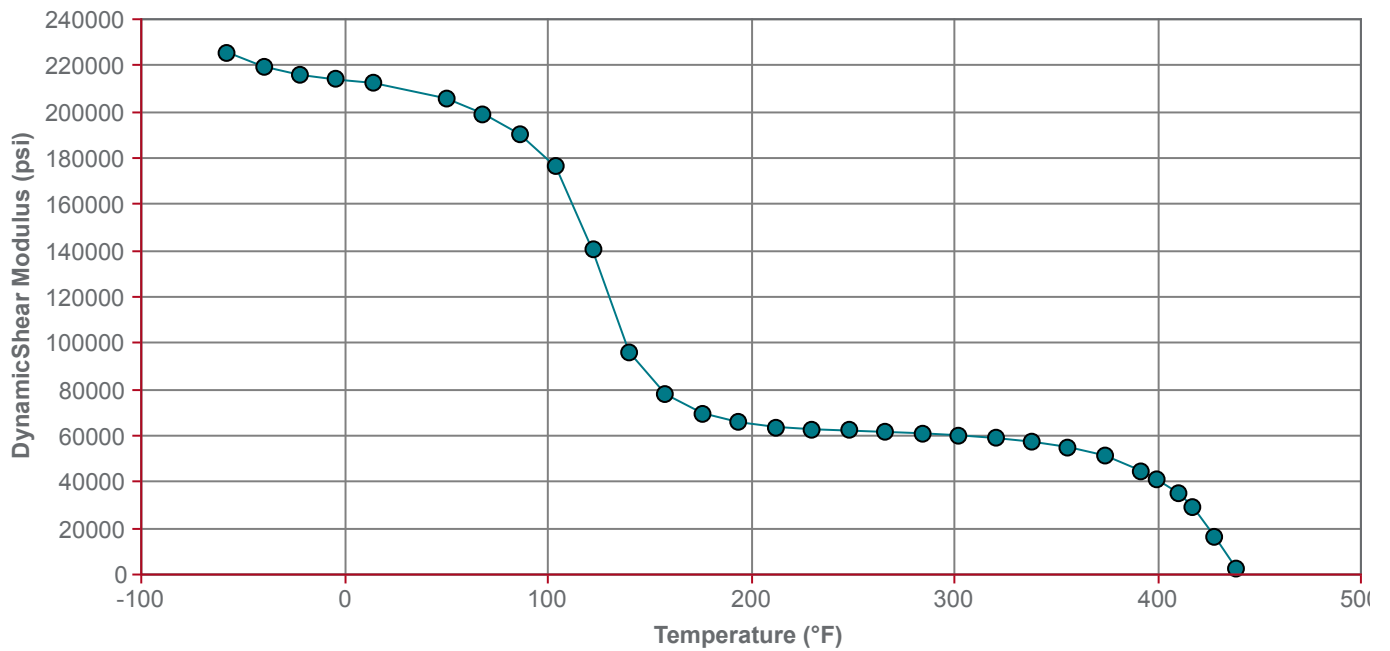


Additional Information	Dry	Conditioned	Unit	Test Method
Odor <sup>6</sup>	4.00	--		VDA 270

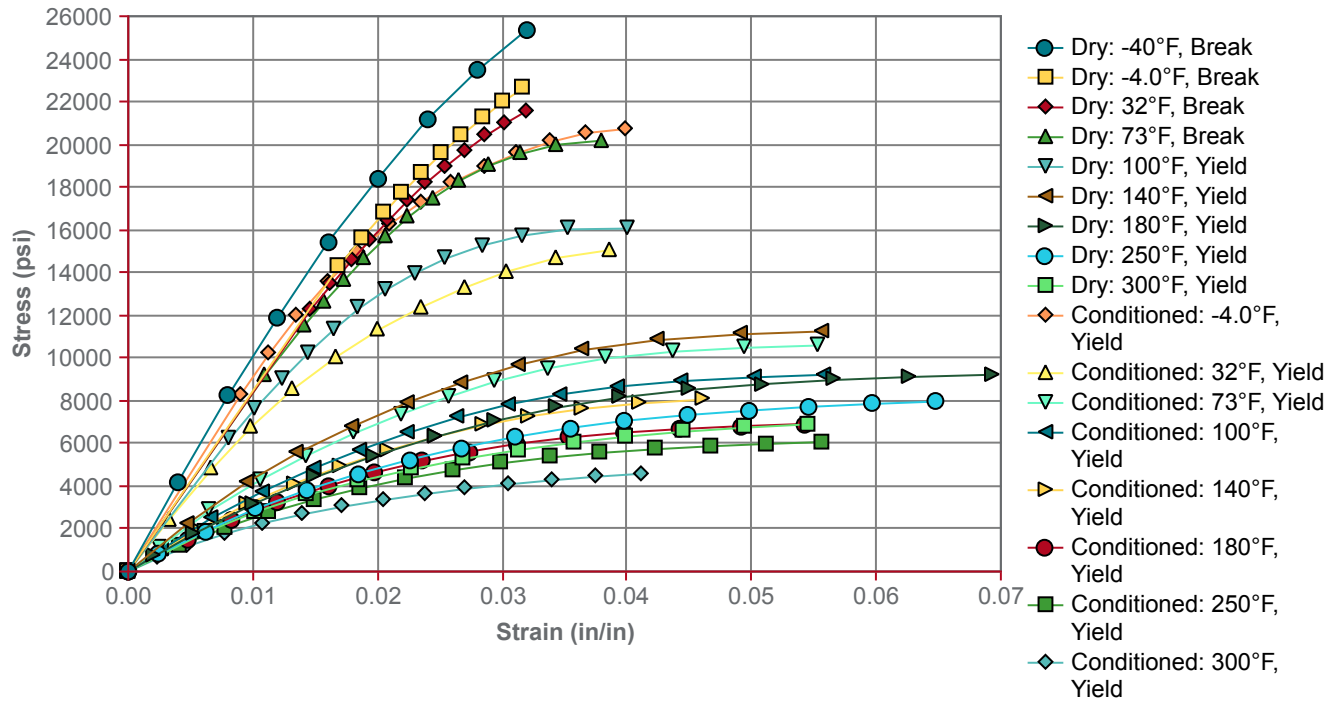
Injection	Dry (English)	Dry (SI)
Drying Temperature	176 °F	80 °C
Drying Time - Desiccant Dryer	2.0 to 4.0 hr	2.0 to 4.0 hr
Suggested Max Moisture	0.20 %	0.20 %
Processing (Melt) Temp	500 to 536 °F	260 to 280 °C
Melt Temperature, Optimum	518 °F	270 °C
Mold Temperature	158 to 248 °F	70 to 120 °C
Mold Temperature, Optimum	212 °F	100 °C
Holding Pressure	7250 to 14500 psi	50.0 to 100 MPa
Drying Recommended	yes	yes
Hold Pressure Time	3.00 s/mm	3.00 s/mm
Maximum Screw Tangential Speed	472 in/min	12 m/min



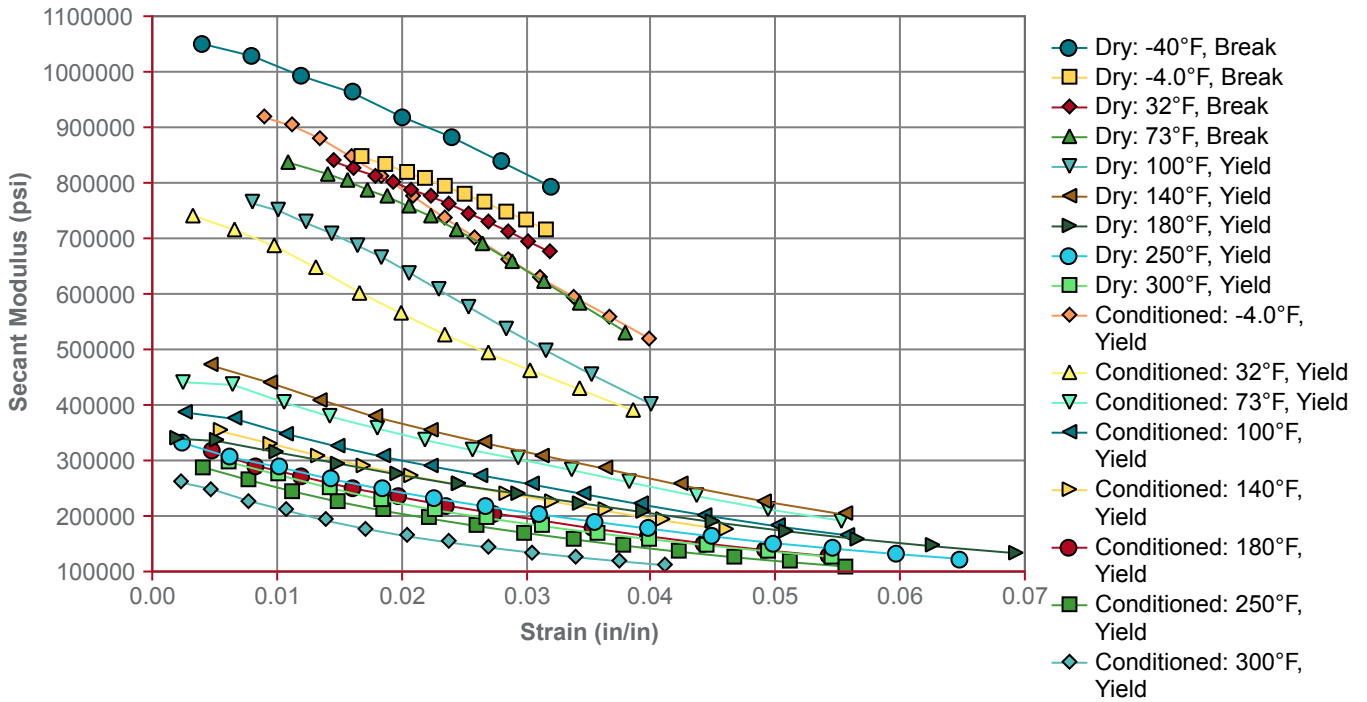
Shear Modulus vs. Temperature, Dynamic (ISO 11403-1)



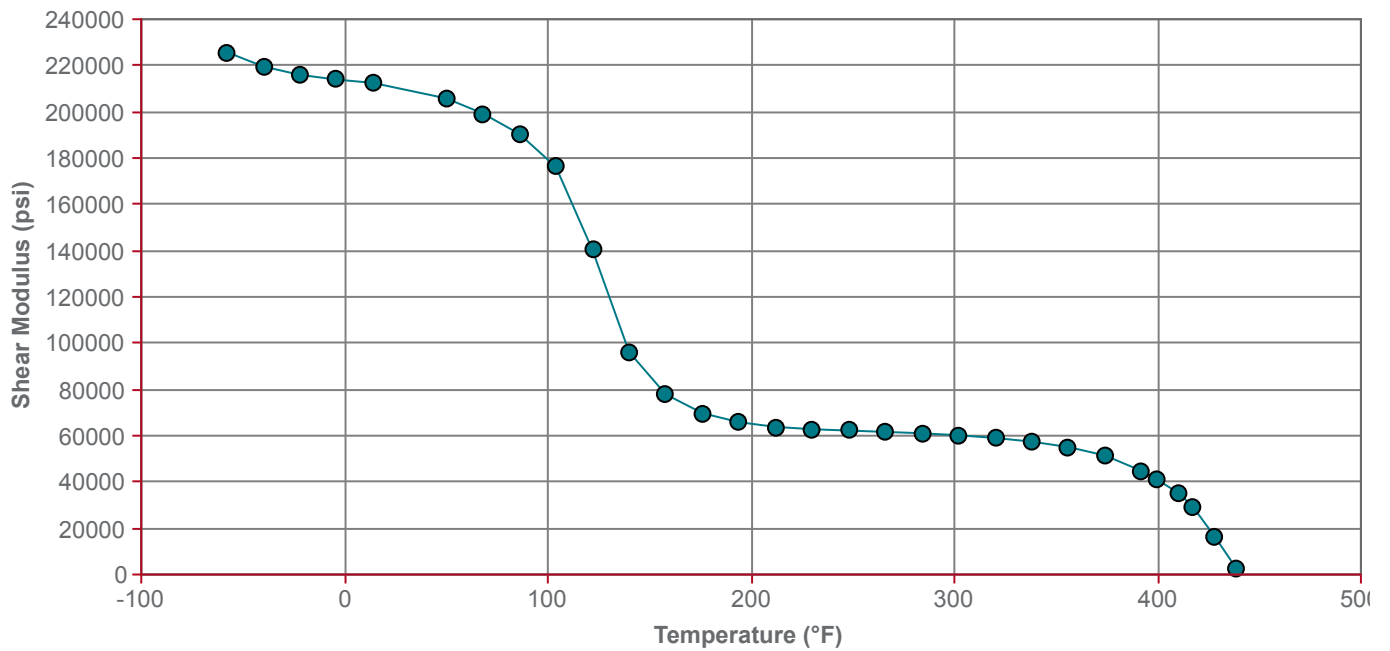
Isothermal Stress vs. Strain (ISO 11403-1)



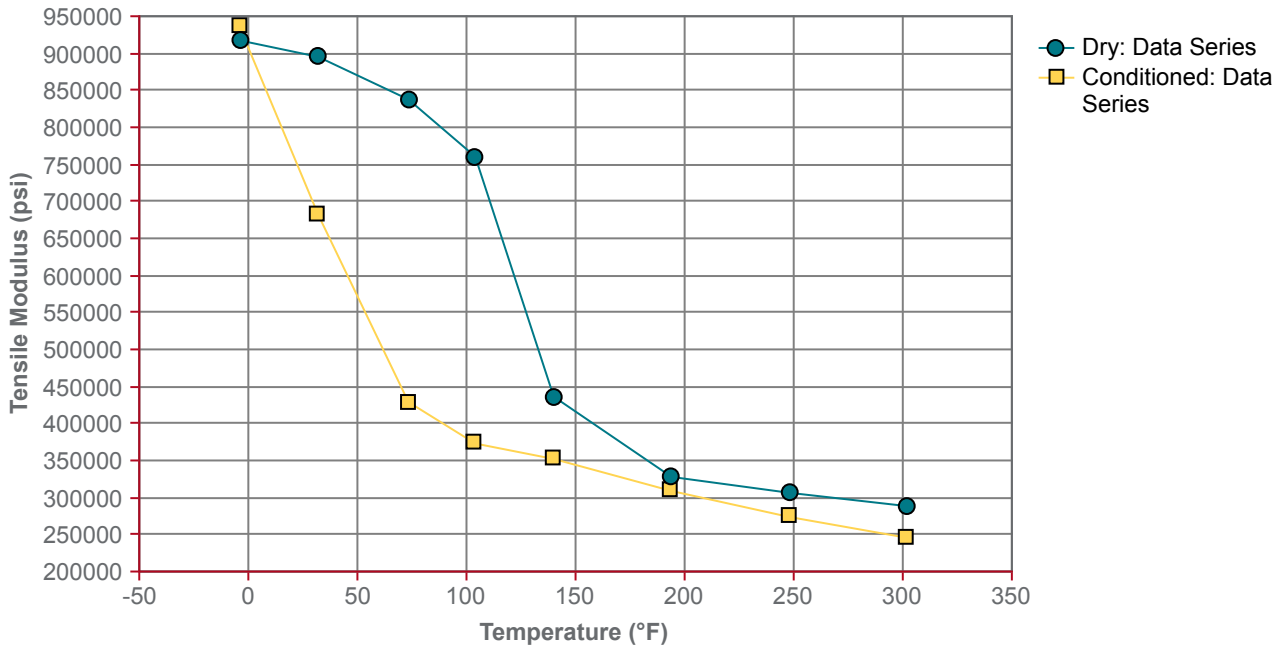
Secant Modulus vs. Strain (ISO 11403-1)



Shear Modulus vs. Temperature (ISO 11403-1)



Tensile Modulus vs. Temperature (ISO 11403-1)





#### Notes

<sup>1</sup> These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

<sup>2</sup> A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

<sup>3</sup> Typical properties: these are not to be construed as specifications.

<sup>4</sup> 10°C/min

<sup>5</sup> FMVSS 302, Derived from Similar Grade

<sup>6</sup> Derived from Similar Grade

