

## DuPont Performance Polymers Zytel® ST801AW NC010 Nylon 66 (Unverified Data\*\*)

Category : Polymer , Thermoplastic , Nylon , Nylon 66

### Material Notes:

Zytel® ST801AW NC010 is a Super Tough, high performance polyamide 66 resin. It is UV stabilized and when appropriately colored offers the best resistance to indirect sunlight in automotive interior applications. Information provided by DuPont

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_DuPont-Performance-Polymers-Zytel-ST801AW-NC010-Nylon-66-nbspUnverified-Data.php](http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Zytel-ST801AW-NC010-Nylon-66-nbspUnverified-Data.php)

Physical Properties	Metric	English	Comments
Density	1.08 g/cc	0.0390 lb/in <sup>3</sup>	DAM; ISO 1183
Water Absorption	1.17 %	1.17 %	DAM; Immersion 24h; ISO 62, Similar to
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Water Absorption	1.9 %	1.9 %	DAM; Equilibrium 50%RH; ISO 62, Similar to
	@Thickness 1.00 mm, Temperature 23.0 °C	@Thickness 0.0394 in, Temperature 73.4 °F	
Linear Mold Shrinkage, Flow	0.020 cm/cm	0.020 in/in	DAM; ISO 294-4
	@Thickness 2.00 mm	@Thickness 0.0787 in	
Linear Mold Shrinkage, Transverse	0.018 cm/cm	0.018 in/in	DAM; ISO 294-4
	@Thickness 2.00 mm	@Thickness 0.0787 in	

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell R	110	110	DAM; ISO 2039/2
Tensile Strength at Break	45.0 MPa	6530 psi	DAM; 50mm/min; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Strength at Break	48.0 MPa	6960 psi	50%RH; 50mm/min; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Stress	48.0 MPa	6960 psi	50%RH; ISO 527
	@Strain 50.0 %, Temperature 23.0 °C	@Strain 50.0 %, Temperature 73.4 °F	
Tensile Strength at Break	50.0 MPa	7250 psi	DAM; ISO 527
	@Strain 50.0 %, Temperature 23.0 °C	@Strain 50.0 %, Temperature 73.4 °F	
Tensile Strength, Yield	35.5 MPa	5150 psi	50%RH; ISO 527

Mechanical Properties	@Temperature 23.0 °C Metric	@Temperature 73.4 °F English	Comments
	49.0 MPa	7110 psi	DAM; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Elongation at Break	44 %	44 %	DAM; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	>= 50 %	>= 50 %	50%RH; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	>= 50 %	>= 50 %	DAM; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	>= 50 %	>= 50 %	50%RH; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	74 %	74 %	DAM; 50mm/min; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Elongation at Yield	5.0 %	5.0 %	DAM; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	26.5 %	26.5 %	50%RH; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Tensile Modulus	0.775 GPa	112 ksi	50%RH; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	1.90 GPa	276 ksi	DAM; ISO 527
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Flexural Modulus	0.728 GPa	106 ksi	50%RH; ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	1.80 GPa	261 ksi	DAM; ISO 178
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Notched (ISO)	21.0 kJ/m <sup>2</sup>	9.99 ft-lb/in <sup>2</sup>	DAM; ISO 180/1A
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	77.0 kJ/m <sup>2</sup>	36.6 ft-lb/in <sup>2</sup>	DAM; ISO 180/1A
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Izod Impact, Unnotched (ISO)	NB	NB	DAM; ISO 180/1U
	@Temperature -30.0 °C	@Temperature -22.0 °F	

Mechanical Properties	Metric	English	Comments
	@Temperature 23.0 °C	@Temperature 73.4 °F	DAM; ISO 180/1U
Charpy Impact Unnotched	24.0 J/cm <sup>2</sup>	114 ft-lb/in <sup>2</sup>	DAM; ISO 179/1eU
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	26.0 J/cm <sup>2</sup>	124 ft-lb/in <sup>2</sup>	DAM; ISO 179/1eU
	@Temperature 0.000 °C	@Temperature 32.0 °F	
	30.0 J/cm <sup>2</sup>	143 ft-lb/in <sup>2</sup>	DAM; ISO 179/1eU
	@Temperature -20.0 °C	@Temperature -4.00 °F	
	NB	NB	DAM; ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	NB	NB	DAM; ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	2.10 J/cm <sup>2</sup>	9.99 ft-lb/in <sup>2</sup>	DAM; ISO 179/1eA
	@Temperature -40.0 °C	@Temperature -40.0 °F	
	2.20 J/cm <sup>2</sup>	10.5 ft-lb/in <sup>2</sup>	50%RH; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	2.20 J/cm <sup>2</sup>	10.5 ft-lb/in <sup>2</sup>	DAM; ISO 179/1eA
	@Temperature -20.0 °C	@Temperature -4.00 °F	
	2.30 J/cm <sup>2</sup>	10.9 ft-lb/in <sup>2</sup>	DAM; ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	3.60 J/cm <sup>2</sup>	17.1 ft-lb/in <sup>2</sup>	DAM; ISO 179/1eA
	@Temperature 0.000 °C	@Temperature 32.0 °F	
	8.30 J/cm <sup>2</sup>	39.5 ft-lb/in <sup>2</sup>	DAM; ISO 179/1eA
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	120 µm/m-°C	66.7 µin/in-°F	DAM; ASTM E 831
	@Temperature -40.0 - 23.0 °C	@Temperature -40.0 - 73.4 °F	
	120 µm/m-°C	66.7 µin/in-°F	DAM; ISO 11359-1/-2
	@Temperature -40.0 - 23.0 °C	@Temperature -40.0 - 73.4 °F	

Thermal Properties	130 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ Metric	72.2 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ English	Comments DAM; ISO 11359-1/-2
	@Temperature -30.0 - 30.0 $^\circ\text{C}$	@Temperature -22.0 - 86.0 $^\circ\text{F}$	
	130 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	72.2 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	DAM; ASTM E 831
	@Temperature -30.0 - 30.0 $^\circ\text{C}$	@Temperature -22.0 - 86.0 $^\circ\text{F}$	
	140 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	77.8 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	DAM; ASTM E 831
	@Temperature 23.0 - 55.0 $^\circ\text{C}$	@Temperature 73.4 - 131 $^\circ\text{F}$	
	140 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	77.8 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	DAM; ISO 11359-1/-2
	@Temperature 23.0 - 55.0 $^\circ\text{C}$	@Temperature 73.4 - 131 $^\circ\text{F}$	
	170 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	94.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	DAM; ASTM E 831
	@Temperature 55.0 - 160 $^\circ\text{C}$	@Temperature 131 - 320 $^\circ\text{F}$	
	170 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	94.4 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	DAM; ISO 11359-1/-2
	@Temperature 55.0 - 160 $^\circ\text{C}$	@Temperature 131 - 320 $^\circ\text{F}$	
CTE, linear, Transverse to Flow	110 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	61.1 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	DAM; ISO 11359-1/-2
	@Temperature -30.0 - 30.0 $^\circ\text{C}$	@Temperature -22.0 - 86.0 $^\circ\text{F}$	
	110 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	61.1 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	DAM; ISO 11359-1/-2
	@Temperature -40.0 - 23.0 $^\circ\text{C}$	@Temperature -40.0 - 73.4 $^\circ\text{F}$	
	110 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	61.1 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	DAM; ASTM E 831
	@Temperature -30.0 - 30.0 $^\circ\text{C}$	@Temperature -22.0 - 86.0 $^\circ\text{F}$	
	110 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	61.1 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	DAM; ASTM E 831
	@Temperature -40.0 - 23.0 $^\circ\text{C}$	@Temperature -40.0 - 73.4 $^\circ\text{F}$	
	120 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	66.7 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	DAM; ASTM E 831
	@Temperature 55.0 - 160 $^\circ\text{C}$	@Temperature 131 - 320 $^\circ\text{F}$	
	120 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	66.7 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	DAM; ISO 11359-1/-2
	@Temperature 23.0 - 55.0 $^\circ\text{C}$	@Temperature 73.4 - 131 $^\circ\text{F}$	
	120 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	66.7 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	DAM; ISO 11359-1/-2
	@Temperature 55.0 -	@Temperature 131 -	

Thermal Properties	160 °C Metric	320 °F English	Comments
<b>Electrical Properties</b>	<b>Metric</b>	<b>English</b>	<b>Comments</b>
Volume Resistivity	2.40e+12 ohm-cm	2.40e+12 ohm-cm	50%RH; IEC 60093
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Surface Resistance	2.50e+16 ohm-cm	2.50e+16 ohm-cm	DAM; IEC 60093
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Surface Resistance	7.10e+12 ohm	7.10e+12 ohm	50%RH; IEC 60093
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Dielectric Constant	2.70e+15 ohm	2.70e+15 ohm	DAM; IEC 60093
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Dielectric Constant	3.2	3.2	DAM; IEC 60250
	@Frequency 1.00e+6 Hz, Temperature 23.0 °C	@Frequency 1.00e+6 Hz, Temperature 73.4 °F	
Dielectric Constant	3.4	3.4	DAM; IEC 60250
	@Frequency 100 Hz, Temperature 23.0 °C	@Frequency 100 Hz, Temperature 73.4 °F	
Dielectric Constant	3.5	3.5	50%RH; IEC 60250
	@Frequency 1.00e+6 Hz, Temperature 23.0 °C	@Frequency 1.00e+6 Hz, Temperature 73.4 °F	
Dielectric Strength	6.0	6.0	50%RH; IEC 60250
	@Frequency 100 Hz, Temperature 23.0 °C	@Frequency 100 Hz, Temperature 73.4 °F	
Dielectric Strength	26.0 kV/mm	660 kV/in	50%RH; IEC 60243-1
	@Thickness 2.00 mm, Temperature 23.0 °C	@Thickness 0.0787 in, Temperature 73.4 °F	
Dissipation Factor	26.0 kV/mm	660 kV/in	DAM; IEC 60243-1
	@Thickness 2.00 mm, Temperature 23.0 °C	@Thickness 0.0787 in, Temperature 73.4 °F	
Dissipation Factor	0.0050	0.0050	DAM; IEC 60250
	@Frequency 100 Hz, Temperature 23.0 °C	@Frequency 100 Hz, Temperature 73.4 °F	
Dissipation Factor	0.011	0.011	DAM; IEC 60250
	@Frequency 1.00e+6 Hz,	@Frequency 1.00e+6 Hz,	

Electrical Properties	Temperature 23.0 °C Metric	Temperature 73.4 °F English	Comments
	0.038	0.038	
	@Frequency 1.00e+6 Hz, Temperature 23.0 °C	@Frequency 1.00e+6 Hz, Temperature 73.4 °F	50%RH; IEC 60250
	0.176	0.176	
	@Frequency 100 Hz, Temperature 23.0 °C	@Frequency 100 Hz, Temperature 73.4 °F	50%RH; IEC 60250
Comparative Tracking Index	600 V	600 V	
	@Thickness 3.00 mm, Temperature 23.0 °C	@Thickness 0.118 in, Temperature 73.4 °F	DAM; UL 746A

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