

## DuPont Performance Polymers Zytel® ST801AW BK195 Nylon 66 (Unverified Data\*\*)

Category : Polymer , Thermoplastic , Nylon , Nylon 66

### Material Notes:

Zytel® ST801AW BK195 is a Super Tough, weatherable, easy flow and processing friendly, black polyamide 66 resin for injection molding. It offers the best resistance to outdoor exposure. Information provided by DuPont

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_DuPont-Performance-Polymers-Zytel-ST801AW-BK195-Nylon-66-nbspUnverified-Data.php](http://www.lookpolymers.com/polymer_DuPont-Performance-Polymers-Zytel-ST801AW-BK195-Nylon-66-nbspUnverified-Data.php)

Physical Properties	Metric	English	Comments
Density	1.09 g/cc	0.0394 lb/in <sup>3</sup>	DAM; ISO 1183
Water Absorption	1.07 % @Temperature 23.0 °C	1.07 % @Temperature 73.4 °F	DAM; Immersion 24h; ISO 62, Similar to
Linear Mold Shrinkage, Flow	0.022 cm/cm @Thickness 2.00 mm	0.022 in/in @Thickness 0.0787 in	DAM; ISO 294-4
Linear Mold Shrinkage, Transverse	0.020 cm/cm @Thickness 2.00 mm	0.020 in/in @Thickness 0.0787 in	DAM; ISO 294-4

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	45.0 MPa @Temperature 23.0 °C	6530 psi @Temperature 73.4 °F	DAM; 50mm/min; ISO 527
Tensile Stress	41.0 MPa @Strain 50.0 %, Temperature 23.0 °C	5950 psi @Strain 50.0 %, Temperature 73.4 °F	50%RH; ISO 527
	50.0 MPa @Strain 50.0 %, Temperature 23.0 °C	7250 psi @Strain 50.0 %, Temperature 73.4 °F	DAM; ISO 527
Tensile Strength, Yield	47.0 MPa @Temperature 23.0 °C	6820 psi @Temperature 73.4 °F	DAM; ISO 527
Elongation at Break	48 % @Temperature 23.0 °C	48 % @Temperature 73.4 °F	DAM; ISO 527
	>= 50 % @Temperature 23.0 °C	>= 50 % @Temperature 73.4 °F	50%RH; ISO 527
	75 %	75 %	

Mechanical Properties	Metric @ Temperature 23.0 °C	English @ Temperature 73.4 °F	DAM: 50mm/min; ISO 527 Comments
Elongation at Yield	30 % @ Temperature 23.0 °C	30 % @ Temperature 73.4 °F	DAM; ISO 527
Tensile Modulus	1.237 GPa @ Temperature 23.0 °C	179.4 ksi @ Temperature 73.4 °F	50%RH; ISO 527
	1.90 GPa @ Temperature 23.0 °C	276 ksi @ Temperature 73.4 °F	DAM; ISO 527
Flexural Modulus	1.80 GPa @ Temperature 23.0 °C	261 ksi @ Temperature 73.4 °F	DAM; ISO 178
Izod Impact, Notched (ISO)	18.0 kJ/m <sup>2</sup> @ Temperature -40.0 °C	8.57 ft-lb/in <sup>2</sup> @ Temperature -40.0 °F	DAM; ISO 180/1A
	76.0 kJ/m <sup>2</sup> @ Temperature 23.0 °C	36.2 ft-lb/in <sup>2</sup> @ Temperature 73.4 °F	DAM; ISO 180/1A
Izod Impact, Unnotched (ISO)	NB @ Temperature 23.0 °C	NB @ Temperature 73.4 °F	DAM; ISO 180/1U
Charpy Impact Unnotched	NB @ Temperature 23.0 °C	NB @ Temperature 73.4 °F	DAM; ISO 179/1eU
Charpy Impact, Notched	1.90 J/cm <sup>2</sup> @ Temperature -40.0 °C	9.04 ft-lb/in <sup>2</sup> @ Temperature -40.0 °F	DAM; ISO 179/1eA
	7.90 J/cm <sup>2</sup> @ Temperature 23.0 °C	37.6 ft-lb/in <sup>2</sup> @ Temperature 73.4 °F	DAM; ISO 179/1eA

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	110 µm/m-°C @ Temperature -40.0 - 23.0 °C	61.1 µin/in-°F @ Temperature -40.0 - 73.4 °F	DAM; ASTM E 831
	110 µm/m-°C @ Temperature -40.0 - 23.0 °C	61.1 µin/in-°F @ Temperature -40.0 - 73.4 °F	DAM; ISO 11359-1/-2
	120 µm/m-°C @ Temperature -30.0 - 30.0 °C	66.7 µin/in-°F @ Temperature -22.0 - 86.0 °F	DAM; ASTM E 831
	120 µm/m-°C	66.7 µin/in-°F	

Thermal Properties	Metric	English	Comments
	@Temperature -30.0 - 30.0 °C	@Temperature -22.0 - 86.0 °F	DAM; ISO 11359-1/-2
	150 µm/m-°C	83.3 µin/in-°F	
	@Temperature 55.0 - 160 °C	@Temperature 131 - 320 °F	DAM; ISO 11359-1/-2
	150 µm/m-°C	83.3 µin/in-°F	
	@Temperature 55.0 - 160 °C	@Temperature 131 - 320 °F	DAM; ASTM E 831
	150 µm/m-°C	83.3 µin/in-°F	
	@Temperature 23.0 - 55.0 °C	@Temperature 73.4 - 131 °F	DAM; ISO 11359-1/-2
	150 µm/m-°C	83.3 µin/in-°F	
	@Temperature 23.0 - 55.0 °C	@Temperature 73.4 - 131 °F	DAM; ASTM E 831
CTE, linear, Transverse to Flow	100 µm/m-°C	55.6 µin/in-°F	
	@Temperature -40.0 - 23.0 °C	@Temperature -40.0 - 73.4 °F	DAM; ASTM E 831
	100 µm/m-°C	55.6 µin/in-°F	
	@Temperature -40.0 - 23.0 °C	@Temperature -40.0 - 73.4 °F	DAM; ISO 11359-1/-2
	110 µm/m-°C	61.1 µin/in-°F	
	@Temperature -30.0 - 30.0 °C	@Temperature -22.0 - 86.0 °F	DAM; ASTM E 831
	110 µm/m-°C	61.1 µin/in-°F	
	@Temperature -30.0 - 30.0 °C	@Temperature -22.0 - 86.0 °F	DAM; ISO 11359-1/-2
	130 µm/m-°C	72.2 µin/in-°F	
	@Temperature 55.0 - 160 °C	@Temperature 131 - 320 °F	DAM; ASTM E 831
	130 µm/m-°C	72.2 µin/in-°F	
	@Temperature 23.0 - 55.0 °C	@Temperature 73.4 - 131 °F	DAM; ISO 11359-1/-2
	130 µm/m-°C	72.2 µin/in-°F	
	@Temperature 55.0 - 160 °C	@Temperature 131 - 320 °F	DAM; ISO 11359-1/-2
	130 µm/m-°C	72.2 µin/in-°F	
	@Temperature 23.0 - 55.0 °C	@Temperature 73.4 - 131 °F	DAM; ASTM E 831

Thermal Properties	Metric	English	Comments <small>min; ISO 11357-1/-3</small>
Deflection Temperature at 0.46 MPa (66 psi)	162 °C	324 °F	DAM; ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	62.0 °C	144 °F	DAM; ISO 75-1/-2
UL RTI, Electrical	125 °C	257 °F	DAM; UL 746B
	@Thickness 0.750 mm	@Thickness 0.0295 in	
UL RTI, Mechanical with Impact	75.0 °C	167 °F	DAM; UL 746B
	@Thickness 0.750 mm	@Thickness 0.0295 in	
UL RTI, Mechanical without Impact	85.0 °C	185 °F	DAM; UL 746B
	@Thickness 0.750 mm	@Thickness 0.0295 in	
Flammability, UL94	HB	HB	DAM; IEC 60695-11-10
	@Thickness 0.750 mm	@Thickness 0.0295 in	
	HB	HB	DAM; UL94
	@Thickness 0.750 mm	@Thickness 0.0295 in	

Electrical Properties	Metric	English	Comments
Volume Resistivity	7.40e+12 ohm-cm	7.40e+12 ohm-cm	50%RH; IEC 60093
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	2.00e+16 ohm-cm	2.00e+16 ohm-cm	DAM; IEC 60093
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Surface Resistance	3.00e+12 ohm	3.00e+12 ohm	50%RH; IEC 60093
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	2.40e+16 ohm	2.40e+16 ohm	DAM; IEC 60093
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Dielectric Constant	3.7	3.7	DAM; IEC 60250
	@Frequency 1.00e+6 Hz, Temperature 23.0 °C	@Frequency 1.00e+6 Hz, Temperature 73.4 °F	
	3.9	3.9	DAM; IEC 60250
	@Frequency 100 Hz, Temperature 23.0 °C	@Frequency 100 Hz, Temperature 73.4 °F	
	4.0	4.0	50%RH; IEC 60250
	@Frequency 1.00e+6	@Frequency 1.00e+6	

Electrical Properties	Metric Hz, Temperature 23.0 °C	English Hz, Temperature 73.4 °F	Comments
	6.7	6.7	50%RH; IEC 60250
	@Frequency 100 Hz, Temperature 23.0 °C	@Frequency 100 Hz, Temperature 73.4 °F	
Dielectric Strength	22.0 kV/mm	559 kV/in	50%RH; IEC 60243-1
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	25.0 kV/mm	635 kV/in	DAM; IEC 60243-1
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Dissipation Factor	0.0060	0.0060	DAM; IEC 60250
	@Frequency 100 Hz, Temperature 23.0 °C	@Frequency 100 Hz, Temperature 73.4 °F	
	0.012	0.012	DAM; IEC 60250
	@Frequency 1.00e+6 Hz, Temperature 23.0 °C	@Frequency 1.00e+6 Hz, Temperature 73.4 °F	
	0.044	0.044	50%RH; IEC 60250
	@Frequency 1.00e+6 Hz, Temperature 23.0 °C	@Frequency 1.00e+6 Hz, Temperature 73.4 °F	
	0.159	0.159	50%RH; IEC 60250
	@Frequency 100 Hz, Temperature 23.0 °C	@Frequency 100 Hz, Temperature 73.4 °F	
Comparative Tracking Index	600 V	600 V	DAM; IEC 60112
	@Temperature 23.0 °C	@Temperature 73.4 °F	
	600 V	600 V	DAM; UL 746A
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Processing Properties	Metric	English	Comments
Melt Temperature	270 - 300 °C	518 - 572 °F	DAM
	290 °C	554 °F	DAM; optimum
Mold Temperature	70.0 °C	158 °F	DAM; Optimum
	50.0 - 90.0 °C	122 - 194 °F	DAM
Drying Temperature	80.0 °C	176 °F	DAM
Dry Time	2.00 - 4.00 hour	2.00 - 4.00 hour	DAM; Dehumidified Dryer

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