DuPont™ Zytel®

nylon resin

PRELIMINARY DATA

Zytel® ST801AHS NC010

Super Tough, High Performance Nylon 66 Resin

Zytel® ST801AHS NC010 is a Super Tough, high performance nylon 66 resin. It offers outstanding molding performance in injection molding applications. It replaces Zyt® ST801HS NC010.

Property	Test Method	Units	Value	
			DAM	50%RH
Mechanical				
Tensile Stress	ISO 527-1/-2	MPa (kpsi)		
-40°C (-40°F), Strain 50%			80 (11.6)	83 (12.0)
0°C (32°F), Strain 50%			60 (8.7)	51 (7.4)
23°C (73°F), Strain 50%			52 (7.5)	45 (6.5)
60°C (140°F), Strain 50%			41 (5.9)	32 (4.6)
80°C (175°F), Strain 50%			37 (5.3)	31 (4.4)
100°C (212°F), Strain 50%			36 (5.2)	27 (3.9)
120°C (250°F), Strain 50%			32 (4.6)	25 (3.6)
150°C (300°F), Strain 50%			26 (3.7)	22 (3.1)
Yield Stress	ISO 527-1/-2	MPa (kpsi)		
-40°C (-40°F)			80 (11.6)	83 (12.0)
0°C (32°F)			60 (8.7)	50 (7.2)
23°C (73°F)			52 (7.5)	
Yield Strain	ISO 527-1/-2	%		
-40°C (-40°F)			11.1	14.4
0°C (32°F)			6.7	24.2
23°C (73°F)			4.4	>50
60°C (140°F)			>50	>50
80°C (175°F)			>50	>50

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.
ISO Mechanical properties measured at 4.0mm, ISO Electrical properties measured at 2.0mm, and all ASTM properties measured at 3.2mm.
Test temperatures are 23°C unless otherwise stated.

The above data are preliminary and are subject to change as additional data are developed on subsequent lots.

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Property	Test Method	Units	Value	
			DAM	50%RH
Mechanical				
Yield Strain	ISO 527-1/-2	%		
100°C (212°F)			>50	>50
120°C (250°F)			>50	>50
150°C (300°F)			>50	>50
Nominal Strain at Break	ISO 527-1/-2	%		
-40°C (-40°F)			21.2	24.5
0°C (32°F)			25.0	>50
23°C (73°F)			24.6	>50
60°C (140°F)			>50	>50
80°C (175°F)			>50	>50
100°C (212°F)			>50	>50
120°C (250°F)			>50	>50
150°C (300°F)			>50	>50
Tensile Modulus	ISO 527-1/-2	MPa (kpsi)		
-40°C (-40°F)			2167 (314)	2822 (409)
0°C (32°F)			2232 (324)	2521 (366)
23°C (73°F)			2000 (290)	971 (141)
60°C (140°F)			1250 (181)	679 (98)
80°C (175°F)			748 (108)	447 (65)
100°C (212°F)			484 (70)	477 (69)
120°C (250°F)			416 (60)	294 (43)
150°C (300°F)			380 (55)	271 (39)
Flexural Modulus	ISO 178	MPa (kpsi)		
-40°C (-40°F)			1990 (289)	2365 (343)
0°C (32°F)			1940 (281)	1774 (257)

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			DAM	50%RH
Mechanical				
Flexural Modulus	ISO 178	MPa (kpsi)		
23°C (73°F)			1890 (274)	823 (119)
100°C (212°F)			379 (55)	352 (51)
120°C (250°F)			292 (42)	326 (47)
Notched Izod Impact	ISO 180/1A	kJ/m^2		
-40°C (-40°F)			16	16
-20°C (-4°F)			22	20
23°C (73°F)			73	94
Thermal				
Deflection Temperature	ISO 75-1/-2	°C (°F)		
0.45MPa			141 (286)	
1.80MPa			62 (144)	
Melting Temperature	ISO 3146C	°C (°F)	263 (505)	
CLTE, Parallel	ASTM E 831	E-4/C (E-4/F)		
-30 - 30°C (-22 - 86°F)			0.8 (0.5)	
-40 - 23°C (-40 - 73°F)			0.8 (0.5)	
23 - 55°C (73 - 130°F)			0.9 (0.5)	
55 - 160°C (130 - 320°F)			1.0 (0.6)	
CLTE, Normal	ASTM E 831	E-4/C (E-4/F)		
-30 - 30°C (-22 - 86°F)			1.0 (0.6)	
-40 - 23°C (-40 - 73°F)			1.0 (0.6)	
23 - 55°C (73 - 130°F)			1.2 (0.7)	
55 - 160°C (130 - 320°F)			1.5 (0.9)	
Electrical				
Surface Resistivity	IEC 60093	ohm	3.0 E15	5.0 E12

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			DAM	50%RH
Electrical				
Relative Permittivity	IEC 60250			
1E2 Hz			3.5	6.2
1E6 Hz			3.3	3.6
Volume Resistivity	IEC 60093	ohm cm	1.8 E16	2.7 E12
Dissipation Factor	IEC 60250	E-4		
1E2 Hz			0.005	0.177
1E6 Hz			0.011	0.040
Electric Strength	IEC 60243-1	kV/mm	24	24
CTI	IEC 60112	V	600	
Other				
Density	ISO 1183	kg/m^3 (g/cm^3)	1080 (1.08)	
Water Absorption	ISO 62, Similar to	%		
Immersion 24h			1.1	
Saturation, immersed			6.7	
Molding Shrinkage	ISO 294-4	%		
Normal, 50%RH,23°C,48h			1.8	
Parallel, 50%RH,23°C,48h			2.0	
Processing				
Melt Temperature Range		°C (°F)	270-300 (520-570)	
Melt Temperature Optimum		°C (°F)	280 (535)	
Mold Temperature Range		°C (°F)	50-90 (120-190)	
Mold Temperature Optimum		°C (°F)	70 (160)	
Drying Time, Dehumidified Dryer		h	2-4	
Drying Temperature		°C (°F)	80 (175)	
Processing Moisture Content		%	<0.20	

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