Zytel® ST801AHS NC010
NYLON RESIN

Product Description
Zytel® ST801AHS NC010 is a Super Tough, high performance polyamide 66 resin. It offers outstanding molding performance in injection molding applications.

General			
Material Status	• Commercial: Active		
Availability	• Asia Pacific	• Europe	• North America
Additive	• Heat Stabilizer	• Impact Modifier	
Features	• Fuel Resistant • Good Chemical Resistance • Good Heat Aging Resistance • Good Thermal Aging Resistance	• Grease Resistant • Heat Stabilized • High Impact Resistance • Impact Modified	• Low Temperature Toughness • Oil Resistant • Ultra High Toughness • Ultrasonic Weldable
Uses	• Appliance Components • Automotive Applications	• Electrical/Electronic Applications • Industrial Applications	• Sporting Goods
RoHS Compliance	• Contact Manufacturer		
Appearance	• Natural Color		
Processing Method	• Injection Molding		
Part Marking Code (ISO 11469)	• >PA66-HI<		
Resin ID (ISO 1043)	• PA66-HI		
Product Category	• Toughened Resins	• Unreinforced Resins	

Physical	Dry	Conditioned	Unit	Test Method
Density	1.08	--	g/cm³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow: 0.0787 in	1.8	--	%	
Flow: 0.0787 in	2.0	--	%	
Water Absorption				ISO 62
73°F, 24 hr	1.1	--	%	
Saturation, 73°F	6.7	--	%	
Equilibrium, 73°F, 0.0394 in, 50% RH	2.0	--	%	

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Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus				ISO 527-2
-40°F	314000	409000	psi	
32°F	324000	366000	psi	
73°F	290000	132000	psi	
140°F	181000	98500	psi	
176°F	108000	64800	psi	
212°F	70200	69200	psi	
248°F	60300	42600	psi	
302°F	55100	39300	psi	
Tensile Stress				ISO 527-2
Yield, -40°F	11600	12000	psi	
Yield, 32°F	8700	7250	psi	
Yield, 73°F	7540	5660	psi	
50% Strain, -40°F	11600	12000	psi	
50% Strain, 32°F	8700	7400	psi	
50% Strain, 73°F	7540	6530	psi	
50% Strain, 140°F	5950	4640	psi	
50% Strain, 176°F	5370	4500	psi	
50% Strain, 212°F	5220	3920	psi	
50% Strain, 248°F	4640	3630	psi	
50% Strain, 302°F	3770	3190	psi	
Tensile Strain				ISO 527-2
Yield, -40°F	11	14	%	
Yield, 32°F	6.7	24	%	
Yield, 73°F	4.0	> 50	%	
Yield, 140°F	> 50	> 50	%	
Yield, 176°F	> 50	> 50	%	
Yield, 212°F	> 50	> 50	%	
Yield, 248°F	> 50	> 50	%	
Yield, 302°F	> 50	> 50	%	
Break, 73°F	--	> 50	%	
Nominal Tensile Strain at Break				ISO 527-2
-40°F	21	25	%	
32°F	25	> 50	%	
73°F	47	> 50	%	
140°F	> 50	> 50	%	
176°F	> 50	> 50	%	
212°F	> 50	> 50	%	
248°F	> 50	> 50	%	
302°F	> 50	> 50	%	
Flexural Modulus				ISO 178
-40°F	289000	343000	psi	
32°F	281000	257000	psi	
73°F	274000	119000	psi	
212°F	55000	51100	psi	
248°F	42400	47300	psi	
Impact	**Dry**	**Conditioned**	**Unit**	**Test Method**
Charpy Notched Impact Strength				ISO 179/1eA
-22°F	9.5	8.1	ft·lb/in²	
73°F	36	52	ft·lb/in²	
Charpy Unnotched Impact Strength (73°F)	No Break	No Break		ISO 179/1eU

To find out more, visit plastics.dupont.com or contact the nearest DuPont location.

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Impact	Dry	Conditioned	Unit	Test Method
Notched Izod Impact Strength				ISO 180/1A
-40°F	9.0	7.6	ft·lb/in²	
-4°F	6.7	9.5	ft·lb/in²	
73°F	36	45	ft·lb/in²	
Thermal	**Dry**	**Conditioned**	**Unit**	**Test Method**
Heat Deflection Temperature				
66 psi, Unannealed	315	--	°F	ISO 75-2/B
264 psi, Unannealed	144	--	°F	ISO 75-2/A
Glass Transition Temperature	167	--	°F	ISO 11357-2
Melting Temperature [2]	504	--	°F	ISO 11357-3
CLTE				ASTM E831 ISO 11359-2
Flow: -40 to 73°F	0.000044	--	in/in/°F	
Flow: -22 to 86°F	0.000044	--	in/in/°F	
Flow: 73 to 131°F	0.000050	--	in/in/°F	
Flow: 131 to 320°F	0.000056	--	in/in/°F	
Transverse: -40 to 73°F	0.000056	--	in/in/°F	
Transverse: -22 to 86°F	0.000056	--	in/in/°F	
Transverse: 73 to 131°F	0.000067	--	in/in/°F	
Transverse: 131 to 320°F	0.000083	--	in/in/°F	
Electrical	**Dry**	**Conditioned**	**Unit**	**Test Method**
Surface Resistivity	3.0E+15	5.0E+12	ohms	IEC 60093
Volume Resistivity	1.8E+16	2.7E+12	ohm·cm	IEC 60093
Relative Permittivity				IEC 60250
73°F, 100 Hz	3.50	6.20		
73°F, 1 MHz	3.30	3.60		
Dissipation Factor				IEC 60250
73°F, 100 Hz	0.0050	0.18		
73°F, 1 MHz	0.011	0.040		
Comparative Tracking Index	600	--	V	IEC 60112
Electric Strength (73°F, 0.0787 in)	610	610	V/mil	IEC 60243-1
Flammability	**Dry**	**Conditioned**	**Unit**	**Test Method**
Flame Rating - UL				UL 94
0.0295 in	HB	--		
0.0591 in	HB	--		
0.118 in	HB	--		
Flammability Classification				IEC 60695-11-10, -20
0.0295 in	HB	--		
0.0591 in	HB	--		
0.118 in	HB	--		

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UL	Dry	Conditioned	Unit	Test Method
RTI Str				UL 746
0.0295 in	203	--	°F	
0.0591 in	221	--	°F	
0.118 in	230	--	°F	
RTI Imp				UL 746
0.0295 in	149	--	°F	
0.0591 in	221	--	°F	
0.118 in	221	--	°F	
RTI Elec				UL 746
0.0295 in	266	--	°F	
0.0591 in	266	--	°F	
0.118 in	266	--	°F	
Comparative Tracking Index (CTI) (0.118 in)	--	> 600	V	UL 746
Comparative Tracking Index (CTI) (PLC)				UL 746
0.118 in	PLC 0	--		

Injection	Dry Unit
Drying Temperature	176 °F
Drying Time	2.0 to 4.0 hr
Suggested Max Moisture	< 0.20 %
Processing (Melt) Temp	518 to 572 °F
Melt Temperature, Optimum	536 °F
Mold Temperature	122 to 194 °F
Mold Temperature, Optimum	158 °F
Drying Recommended	Yes, if moisture content of resin exceeds recommended level

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 10°C/min

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.

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