

Zytel® ST811HS NC010

NYLON RESIN
DuPont Performance Polymers

Message:
Super Toughened, Heat Stabilized, Polyamide 6

General Information				
UL YellowCard		E41938-234353		
Additive		heat stabilizer		
		demoulding		
Features		Thermal Stability		
RoHS Compliance		Contact manufacturer		
Forms		Particle		
Processing Method		Extrusion		
		Injection molding		
Multi-Point Data		Isothermal Stress vs. Strain (ISO 11403-1)		
		Secant Modulus vs. Strain (ISO 11403-1)		
		Shear Stress vs. Shear Rate (ISO 11403-1)		
		Tensile Modulus vs. Temperature, Dynamic (ISO 11403-1)		
		Viscosity vs. Shear Rate (ISO 11403-2)		
Part Marking Code (ISO 11469)		>PA6-HI		
Resin ID (ISO 1043)		PA6-HI		
Physical	Dry	Conditioned	Unit	Test Method
Density	1.04	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Transverse flow	1.4	--	%	ISO 294-4
Flow	0.90	--	%	ISO 294-4
Water Absorption				ISO 62
Saturated, 23°C, 2.00mm	6.8	--	%	ISO 62
Balance, 23°C, 2.00mm, 50% RH	2.3	--	%	ISO 62
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	900	400	MPa	ISO 527-2
Tensile Stress (Yield)	31.0	--	MPa	ISO 527-2
Tensile Strain (Yield)	29	--	%	ISO 527-2
Nominal Tensile Strain at Break	> 50	--	%	ISO 527-2
Flexural Modulus	850	360	MPa	ISO 178

Films	Dry	Conditioned	Unit	Test Method
Tensile Elongation - MD (Yield)	4.0	--	%	ISO 527-3
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	14	13	kJ/m ²	ISO 179/1eA
23°C	71	130	kJ/m ²	ISO 179/1eA
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	No Break	No Break		ISO 179/1eU
23°C	No Break	No Break		ISO 179/1eU
Multi-Axial Instrumented Impact Energy				ISO 6603-2
-30°C	25.0	--	J	ISO 6603-2
23°C	16.0	--	J	ISO 6603-2
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, not annealed	170	--	°C	ISO 75-2/B
1.8 MPa, not annealed	47.0	--	°C	ISO 75-2/A
Glass Transition Temperature ¹	50.0	0.00	°C	ISO 11357-2
Vicat Softening Temperature	95.0	--	°C	ISO 306/B50
Melting Temperature ²	218	--	°C	ISO 11357-3
Linear thermal expansion coefficient				ISO 11359-2
Flow	2.0E-4	--	cm/cm/°C	ISO 11359-2
Lateral	1.8E-4	--	cm/cm/°C	ISO 11359-2
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	--	1.0E+15	ohms	IEC 60093
Volume Resistivity	1.0E+15	1.0E+13	ohms·cm	IEC 60093
Dielectric Strength	31	--	kV/mm	IEC 60243-1
Dissipation Factor				IEC 60250
100 Hz	8.0E-3	0.055		IEC 60250
1 MHz	0.014	0.18		IEC 60250
Flammability	Dry	Conditioned	Unit	Test Method
Burning Rate ³ (1.00 mm)	< 100	--	mm/min	ISO 3795
Flame Rating				UL 94, IEC 60695-11-10, -20
0.75 mm	HB	--		UL 94, IEC 60695-11-10, -20
1.5 mm	HB	--		UL 94, IEC 60695-11-10, -20
FMVSS Flammability	B	--		FMVSS 302

Specific Heat Capacity of Melt	2600	--	J/kg/°C
Thermal Conductivity of Melt	0.15	--	W/m/K
Melt Temperature, Optimum	270		°C
Mold Temperature, Optimum	70		°C
Drying Recommended	yes		
Hold Pressure Time	4.00		s/mm
Maximum Screw Tangential Speed	300		mm/sec
Fill Analysis	Dry	Conditioned	Unit
Melt Density	0.880	--	g/cm ³
Ejection Temperature	190	--	°C
Injection	Dry	Unit	
Drying Temperature	60		°C
Drying Time - Desiccant Dryer	2.0 - 4.0		hr
Suggested Max Moisture	0.20		%
Processing (Melt) Temp	260 - 280		°C
Mold Temperature	50 - 90		°C
Holding Pressure	50.0 - 100		MPa
NOTE			
1.	10°C/min		
2.	10°C/min		
3.	FMVSS 302		

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