

Zytel® ST801 NC010

NYLON RESIN

DuPont Mobility & Materials

PROSPECTOR®

www.ulprospector.com

Technical Data

Product Description

Unreinforced, Super Toughened, Polyamide 66

General

Material Status	• Commercial: Active
UL Yellow Card ¹	• E41938-234519
Search for UL Yellow Card	• DuPont Mobility & Materials • Zytel®
Availability	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Additive	• Impact Modifier
RoHS Compliance	• Contact Manufacturer
Part Marking Code (ISO 11469)	• >PA66-HI<
Resin ID (ISO 1043)	• PA66-HI
ISO Designation	• ISO 16396-PA66-I,,M1G1L1NR,S14-020

Physical	Dry	Conditioned	Unit	Test Method
Density	1.08	--	g/cm ³	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow	1.4	--	%	
Flow	1.8	--	%	
Water Absorption				ISO 62
24 hr, 23°C, 3.00 mm	1.2	--	%	
Saturation, 23°C, 2.00 mm	6.5	--	%	
Equilibrium, 23°C, 2.00 mm, 50% RH	2.0	--	%	

Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	2000	900	MPa	ISO 527-1
Tensile Stress (Yield)	50.0	43.0	MPa	ISO 527-2
Tensile Strain (Yield)	5.7	37	%	ISO 527-2
Nominal Tensile Strain at Break	40	> 50	%	ISO 527-2
Flexural Modulus	1800	700	MPa	ISO 178
Flexural Stress	68.0	--	MPa	ISO 178
Poisson's Ratio	0.40	0.45		

Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	18	17	kJ/m ²	
23°C	80	120	kJ/m ²	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	No Break	No Break		
23°C	No Break	No Break		
Notched Izod Impact Strength				ISO 180/1A
-30°C	20	20	kJ/m ²	
23°C	80	90	kJ/m ²	

Hardness	Dry	Conditioned	Unit	Test Method
Rockwell Hardness (R-Scale)	112	89		ISO 2039-2

Thermal	Dry	Conditioned	Unit	Test Method
Deflection Temperature Under Load				
0.45 MPa, Unannealed	132	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	64.0	--	°C	ISO 75-2/A
1.8 MPa, Annealed	71.0	--	°C	ISO 75-2/A
Glass Transition Temperature ³	75.0	20.0	°C	ISO 11357-2
Ball Pressure Test (220°C)	Pass	--		IEC 60695-10-2



Thermal	Dry	Conditioned	Unit	Test Method
Melting Temperature ³	263	--	°C	ISO 11357-3
CLTE				
Flow : 23 to 55°C	1.2E-4	--	cm/cm/°C	ASTM E831
Flow	1.2E-4	--	cm/cm/°C	ISO 11359-2
Transverse : 23 to 55°C	9.0E-5	--	cm/cm/°C	ASTM E831
Transverse	9.0E-5	--	cm/cm/°C	ISO 11359-2
Hot Mandrel	0	--		IEC 60695-10-2
Electrical	Dry	Conditioned	Unit	Test Method
Surface Resistivity	--	> 1.0E+15	ohms	IEC 62631-3-2
Volume Resistivity	1.0E+12	1.0E+11	ohms·m	IEC 62631-3-1
Electric Strength	31	--	kV/mm	IEC 60243-1
Relative Permittivity				IEC 62631-2-1
1 MHz	2.90	3.20		
100 Hz	3.20	5.50		
Dissipation Factor				IEC 62631-2-1
100 Hz	8.0E-3	0.18		
1 MHz	0.014	0.055		
Arc Resistance	131	--	sec	UL 746B
Comparative Tracking Index	600	--	V	IEC 60112
High Amp Arc Ignition (HAI)				UL 746A
0.750 mm	200	--		
1.50 mm	200	--		
3.00 mm	200	--		
High Voltage Arc Tracking Rate (HVTR)	7.60	--	mm/min	UL 746A
Hot-wire Ignition (HWI)				UL 746A
0.750 mm	9.0	--	sec	
1.50 mm	15	--	sec	
3.00 mm	20	--	sec	
Flammability	Dry	Conditioned	Unit	Test Method
Burning Rate ⁴ (1.00 mm)	< 80	--	mm/min	ISO 3795
Flame Rating				UL 94 IEC 60695-11-10, -20
0.8 mm	HB	--		
1.5 mm	HB	--		
Glow Wire Ignition Temperature				IEC 60695-2-13
0.75 mm	725	--	°C	
1.5 mm	725	--	°C	
3.0 mm	725	--	°C	
Oxygen Index	20	--	%	ISO 4589-2
FMVSS Flammability	B	--		FMVSS 302
Fill Analysis	Dry	Conditioned	Unit	
Melt Density	0.920	--	g/cm ³	
Ejection Temperature	190	--	°C	

Injection	Dry Unit
Drying Temperature	80 °C
Drying Time - Desiccant Dryer	2.0 to 4.0 hr
Suggested Max Moisture	< 0.20 %
Processing (Melt) Temp	280 to 300 °C
Melt Temperature, Optimum	290 °C
Mold Temperature	50 to 100 °C
Mold Temperature, Optimum	80 °C
Holding Pressure	50.0 to 100 MPa



Injection	Dry Unit
Back Pressure	As low as possible
Drying Recommended	yes
Hold Pressure Time	4.00 s/mm
Maximum Screw Tangential Speed	18 m/min

Extrusion	Dry Unit
Drying Temperature	80 °C
Drying Time	3.0 to 4.0 hr
Suggested Max Moisture	< 0.060 %
Melt Temperature	275 to 290 °C
Extrusion Melt Temperature, Optimum	280 °C

Notes

¹ A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.

² Typical properties: these are not to be construed as specifications.

³ 10°C/min

⁴ FMVSS 302



Where to Buy

Supplier

DuPont Mobility & Materials
Wilmington, Wilmington USA
Telephone: 302-999-4592
Web: <http://plastics.dupont.com/>

Distributor

Avient Distribution

Avient Distribution is a global distribution company. Contact Avient Distribution for availability of individual products by country.
Telephone: +1-440-930-3004 (USA); +86-21-6028-4805 (China)
Web: <https://now.avient.com/>
Availability: Global

CCC Plastics

Telephone: 800-461-1638
Web: <https://www.ccc-group.com/>
Availability: Canada

Distrupol Ltd

Distrupol Ltd is a Pan European distribution company. Contact Distrupol Ltd for availability of individual products by country.
Telephone: 08452003040
Web: <http://www.distrupol.com/>
Availability: Denmark, Finland, Ireland, Norway, Sweden, United Kingdom

