

# Zytel® 101L NC010

NYLON RESIN

DuPont Performance Polymers

# PROSPECTOR®

www.ulprospector.com

## Technical Data

### Product Description

Unreinforced Polyamide 66

### General

Material Status	• Commercial: Active
Literature <sup>1</sup>	• Processing - Injection Molding (English) • Typical Processing for DuPont Engineering Polymers (English)
UL Yellow Card <sup>2</sup>	• E41938-100726136 • E41938-234369
Search for UL Yellow Card	• DuPont Performance Polymers • Zytel®
Availability	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Additive	• Mold Release
RoHS Compliance	• Contact Manufacturer
Forms	• Pellets
Processing Method	• Injection Molding
Multi-Point Data	• Shear Modulus vs. Temperature (ISO 11403-1) • Shear Stress vs. Shear Rate (ISO 11403-1) • Tensile Modulus vs. Temperature (ISO 11403-1) • Viscosity vs. Shear Rate (ISO 11403-2)
Part Marking Code (ISO 11469)	• >PA66<
Resin ID (ISO 1043)	• PA66

Physical	Dry	Conditioned	Unit	Test Method
Density	1.14	--	g/cm <sup>3</sup>	ISO 1183
Molding Shrinkage				ISO 294-4
Across Flow	1.4	--	%	
Flow	1.4	--	%	
Water Absorption				ISO 62
Saturation, 23°C, 2.00 mm	8.5	--	%	
Equilibrium, 23°C, 2.00 mm, 50% RH	2.6	--	%	
Viscosity Number	150	--	cm <sup>3</sup> /g	ISO 307
Mechanical	Dry	Conditioned	Unit	Test Method
Tensile Modulus	3100	1400	MPa	ISO 527-2
Tensile Stress (Yield)	82.0	55.0	MPa	ISO 527-2
Tensile Strain (Yield)	4.5	25	%	ISO 527-2
Nominal Tensile Strain at Break	25	> 50	%	ISO 527-2
Tensile Creep Modulus				ISO 899-1
1 hr	--	1400	MPa	
1000 hr	--	820	MPa	
Flexural Modulus	2800	1200	MPa	ISO 178
Films	Dry	Conditioned	Unit	Test Method
Tensile Elongation - MD (Yield)	4.5	--	%	ISO 527-3
Impact	Dry	Conditioned	Unit	Test Method
Charpy Notched Impact Strength				ISO 179/1eA
-30°C	4.5	3.0	kJ/m <sup>2</sup>	
23°C	5.5	15	kJ/m <sup>2</sup>	
Charpy Unnotched Impact Strength				ISO 179/1eU
-30°C	400 kJ/m <sup>2</sup>	No Break		
23°C	No Break	No Break		



Impact	Dry	Conditioned	Unit	Test Method
Notched Izod Impact Strength				ISO 180/1A
-40°C	5.5	--	kJ/m <sup>2</sup>	
-30°C	5.5	3.0	kJ/m <sup>2</sup>	
23°C	5.5	12	kJ/m <sup>2</sup>	
Unnotched Izod Impact Strength				ISO 180/1U
-30°C	300	--	kJ/m <sup>2</sup>	
23°C	No Break	No Break		
Hardness	Dry	Conditioned	Unit	Test Method
Rockwell Hardness				ISO 2039-2
M-Scale	79	59		
R-Scale	121	108		
Ball Indentation Hardness (H 358/30)	180	85.0	MPa	ISO 2039-1
Thermal	Dry	Conditioned	Unit	Test Method
Heat Deflection Temperature				
0.45 MPa, Unannealed	190	--	°C	ISO 75-2/B
1.8 MPa, Unannealed	70.0	--	°C	ISO 75-2/A
Glass Transition Temperature <sup>4</sup>	60.0	--	°C	ISO 11357-2
Vicat Softening Temperature	240	--	°C	ISO 306/B50
Melting Temperature <sup>4</sup>	262	--	°C	ISO 11357-3
CLTE				ISO 11359-2
Flow	1.0E-4	--	cm/cm/°C	
Transverse	1.1E-4	--	cm/cm/°C	
Effective Thermal Diffusivity	5.00E-8	--	m <sup>2</sup> /s	
Electrical	Dry	Conditioned	Unit	Test Method
Volume Resistivity	1.0E+14	1.0E+12	ohms-cm	IEC 60093
Electric Strength	32	28	kV/mm	IEC 60243-1
Relative Permittivity				IEC 60250
100 Hz	3.80	11.0		
1 MHz	3.50	4.00		
Dissipation Factor				IEC 60250
100 Hz	8.0E-3	0.21		
1 MHz	0.018	0.075		
Comparative Tracking Index (CTI)	PLC 0	--		UL 746
Comparative Tracking Index	600	--	V	IEC 60112
Flammability	Dry	Conditioned	Unit	Test Method
Flame Rating				UL 94
0.710 mm	V-2	--		IEC 60695-11-10,
1.50 mm	V-2	--		-20
Oxygen Index	28	--	%	ISO 4589-2
Burning Rate <sup>5</sup> (1.00 mm)	DNI	--		ISO 3795
Fogging - G-value (condensate)	4.0E-4	--	g	ISO 6452
Fill Analysis	Dry	Conditioned	Unit	
Melt Density	0.970	--	g/cm <sup>3</sup>	
Specific Heat Capacity of Melt	2790	--	J/kg/°C	
Thermal Conductivity of Melt	0.16	--	W/m/K	
Additional Information	Dry	Conditioned	Unit	Test Method
Emission of Organic Compounds	10.0	--	µgC/g	VDA 277
Odor	3.50	--		VDA 270
Injection	Dry Unit			
Drying Temperature	80.0 °C			
Drying Time	2.0 to 4.0 hr			
Suggested Max Moisture	0.20 %			



Injection	Dry Unit
Processing (Melt) Temp	280 to 300 °C
Melt Temperature, Optimum	290 °C
Mold Temperature	50.0 to 90.0 °C
Mold Temperature, Optimum	70 °C
Holding Pressure	50.0 to 100 MPa
Drying Recommended	yes
Ejection Temperature	190 °C
Hold Pressure Time	4.00 s/mm
Screw Tangential Speed	400 mm/sec

### Notes

<sup>1</sup> These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.

<sup>2</sup> 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.

<sup>3</sup> Typical properties: these are not to be construed as specifications.

<sup>4</sup> 10°C/min

<sup>5</sup> FMVSS 302



---

## Where to Buy

---

### Supplier

#### DuPont Performance Polymers

Wilmington, DE USA  
**Telephone:** 302-999-4592  
**Web:** <http://plastics.dupont.com/>

---

### Distributor

#### Biesterfeld Plastic GmbH

*Biesterfeld Plastic GmbH is a Pan European distribution company. Contact Biesterfeld Plastic GmbH for availability of individual products by country.*

**Telephone:** +49-40-32008-0

**Web:** <http://www.biesterfeld-plastic.com/>

**Availability:** Algeria, Austria, Belgium, Bosnia and Herzegovina, Brazil, Bulgaria, Croatia, Cyprus, Czech Republic, Egypt, France, Germany, Greece, Hungary, Italy, Libyan Arab Jamahiriya, Luxembourg, Mauritania, Morocco, Netherlands, Poland, Portugal, Romania, Serbia, Slovakia, Slovenia, Spain, Switzerland, Tunisia, Turkey

#### CCC Plastics

**Telephone:** 800-465-6917

**Web:** <http://www.cccplastics.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

#### PolyOne Distribution

*PolyOne Distribution is a global distribution company. Contact PolyOne Distribution for availability of individual products by country.*

**Telephone:** 800-894-4266

**Web:** <http://polyonedistribution.com/>

**Availability:** Global

