

# DuPont™ Zytel®

nylon resin

## Zytel® 42A NC010

Zytel® 42A NC010 is a high viscosity polyamide 66 resin for injection molding and extrusion applications such as film and tubing.

Property	Test Method	Units	Value	
			DAM	50%RH
<b>Identification</b>				
Resin Identification	ISO 1043		PA66	
Part Marking Code	ISO 11469		>PA66<	
<b>Mechanical</b>				
Yield Stress	ISO 527	MPa (kpsi)	83 (12.0)	55 (8.0)
Nominal Strain at Break	ISO 527	%	>50	>100
Yield Strain	ISO 527	%	4.4	27
Tensile Modulus	ISO 527	MPa (kpsi)	3100 (450)	1300 (190)
Flexural Modulus	ISO 178	MPa (kpsi)	2800 (405)	1070 (155)
Notched Charpy Impact Strength	ISO 179/1eA	kJ/m <sup>2</sup>		
-30°C (-22°F)			6	4
23°C (73°F)			6	20
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m <sup>2</sup>		
-30°C (-22°F)			NB	NB
23°C (73°F)			NB	NB

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 DuPont Oval Logo, DuPont™, The miracles of science™ and Zytel® are trademarks or registered trademarks of DuPont Company. Copyright© 2005.

050323/050324

The information provided in this data sheet corresponds to our knowledge on the subject at the date of its publication. This information may be subject to revision as new knowledge and experience becomes available. The data provided fall within the normal range of product properties and relate only to the specific material designated; these data may not be valid for such material used in combination with any other materials, additives or pigments or in any process, unless expressly indicated otherwise. The data provided should not be used to establish specification limits or used alone as the basis of design; they are not intended to substitute for any testing you may need to conduct to determine for yourself the suitability of a specific material for your particular purposes. Since DuPont cannot anticipate all variations in actual end-use conditions DuPont makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent rights. DuPont advises you to seek independent counsel for a freedom to practice opinion on the intended application or end-use of our products. Caution: Do not use this product in medical applications involving permanent implantation in the human body. For other medical applications see "DuPont Medical Caution Statement", H-50102.

Zytel® 42A NC010

Property	Test Method	Units	Value	
			DAM	50%RH
<b>Thermal</b>				
Deflection Temperature 0.45MPa	ISO 75f	°C (°F)	200 (392)	
1.80MPa			70 (158)	
Melting Temperature 10°C/min	ISO 11357-1/-3	°C (°F)	262 (504)	
CLTE, Normal 23 - 55°C (73 - 130°F)	ISO 11359-1/-2	E-4/C (E-4/F)	1.0 (0.55)	
CLTE, Parallel 23 - 55°C (73 - 130°F)	ISO 11359-1/-2	E-4/C (E-4/F)	1.0 (0.55)	
<b>Electrical</b>				
Relative Permittivity 1E2 Hz	IEC 60250		4.3	10.3
1E6 Hz			3.6	4.2
Volume Resistivity	IEC 60093	ohm m	1E13	1E11
Dissipation Factor 1E2 Hz	IEC 60250	E-4	150	2000
1E6 Hz			240	750
Electric Strength 1.0mm	IEC 60243-1	kV/mm (V/mil)	30.5 (774)	
CTI 3.0mm	UL 746A	V	>600	
<b>Flammability</b>				
Flammability Classification 0.71mm	IEC 60695-11-10		HB	
1.5mm			HB	
3.0mm			V-2	

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 DuPont Oval Logo, DuPont™, The miracles of science™ and Zytel® are trademarks or registered trademarks of DuPont Company. Copyright© 2

050323/050324

The information provided in this data sheet corresponds to our knowledge on the subject at the date of its publication. This information may be subject to revision as new knowledge and experience becomes available. The data provided fall within the normal range of product properties and relate only to the specific material designated; these data may not be valid for such material used in combination with any other materials, additives or pigments or in any process, unless expressly indicated otherwise. The data provided should not be used to establish specification limits or used alone as the basis of design; they are not intended to substitute for any testing you may need to conduct to determine for yourself the suitability of a specific material for your particular purposes. Since DuPont cannot anticipate all variations in actual end-use conditions DuPont makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent rights. DuPont advises you to seek independent counsel for a freedom to practice opinion on the intended application or end-use of our products. Caution: Do not use this product in medical applications involving permanent implantation in the human body. For other medical applications see "DuPont Medical Caution Statement", H-50102.

## Zytel® 42A NC010

Property	Test Method	Units	Value	
			DAM	50%RH
<b>Flammability</b>				
Flammability Classification	UL94			
0.71mm			HB	
1.5mm			HB	
3.0mm			V-2	
Oxygen Index	ISO 4589-1/-2	%	28	
High Amperage Arc Ignition Resistance	UL 746A	arcs		
0.71mm			200	
1.5mm			186	
3.0mm			182	
6.0mm			200	
Hot Wire Ignition	UL 746A	s		
0.71mm			10	
1.5mm			13	
3.0mm			17	
6.0mm			20	
<b>Temperature Index</b>				
RTI, Electrical	UL 746B	°C		
0.71mm			125	
RTI, Impact	UL 746B	°C		
0.71mm			65	
1.5mm			75	
RTI, Strength	UL 746B	°C		
0.71mm			65	
1.5mm			85	

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 DuPont Oval Logo, DuPont™, The miracles of science™ and Zytel® are trademarks or registered trademarks of DuPont Company. Copyright© 2

050323/050324

The information provided in this data sheet corresponds to our knowledge on the subject at the date of its publication. This information may be subject to revision as new knowledge and experience becomes available. The data provided fall within the normal range of product properties and relate only to the specific material designated; these data may not be valid for such material used in combination with any other materials, additives or pigments or in any process, unless expressly indicated otherwise. The data provided should not be used to establish specification limits or used alone as the basis of design; they are not intended to substitute for any testing you may need to conduct to determine for yourself the suitability of a specific material for your particular purposes. Since DuPont cannot anticipate all variations in actual end-use conditions DuPont makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent rights. DuPont advises you to seek independent counsel for a freedom to practice opinion on the intended application or end-use of our products. Caution: Do not use this product in medical applications involving permanent implantation in the human body. For other medical applications see "DuPont Medical Caution Statement", H-50102.

Zytel® 42A NC010

Property	Test Method	Units	Value	
			DAM	50%RH
<b>Other</b>				
Density	ISO 1183	kg/m <sup>3</sup> (g/cm <sup>3</sup> )	1140 (1.14)	
Water Absorption	ISO 62, Similar to	%		
Equilibrium 50%RH			2.6	
Saturation, immersed			8.5	
Molding Shrinkage	ISO 294-4	%		
Normal, 2.0mm			1.4	
Parallel, 2.0mm			1.4	
Mold Shrinkage		%		
Flow, 3.2mm (0.126in)			1.5	
<b>Processing</b>				
Melt Temperature Range		°C (°F)	280-300 (535-570)	
Melt Temperature Optimum		°C (°F)	290 (555)	
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		%	<0.05	

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 DuPont Oval Logo, DuPont™, The miracles of science™ and Zytel® are trademarks or registered trademarks of DuPont Company. Copyright© 2

050323/050324

The information provided in this data sheet corresponds to our knowledge on the subject at the date of its publication. This information may be subject to revision as new knowledge and experience becomes available. The data provided fall within the normal range of product properties and relate only to the specific material designated; these data may not be valid for such material used in combination with any other materials, additives or pigments or in any process, unless expressly indicated otherwise. The data provided should not be used to establish specification limits or used alone as the basis of design; they are not intended to substitute for any testing you may need to conduct to determine for yourself the suitability of a specific material for your particular purposes. Since DuPont cannot anticipate all variations in actual end-use conditions DuPont makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent rights. DuPont advises you to seek independent counsel for a freedom to practice opinion on the intended application or end-use of our products. Caution: Do not use this product in medical applications involving permanent implantation in the human body. For other medical applications see "DuPont Medical Caution Statement", H-50102.