

# DuPont™ Delrin®

acetal resin

## Delrin® 500P NC010

Delrin® 500P NC010 is a medium viscosity acetal homopolymer resin for injection molding. Delrin® 500P has improved processing thermal stability.

Property	Test Method	Units	Value
<b>Identification</b>			
Resin Identification	ISO 1043		POM
Part Marking Code	ISO 11469		>POM<
<b>Mechanical</b>			
Yield Stress	ISO 527	MPa (kpsi)	70 (10.1)
Yield Strain	ISO 527	%	17
Strain at Break	ISO 527	%	
50mm/min			40
Nominal Strain at Break	ISO 527	%	30
Tensile Modulus	ISO 527	MPa (kpsi)	3100 (450)
Tensile Creep Modulus	ISO 899	MPa (kpsi)	
1h			2800 (406)
1000h			1600 (232)
Flexural Modulus	ISO 178	MPa (kpsi)	2900 (420)
Flexural Stress	ISO 178	MPa (kpsi)	
@ 3.5% Strain			80 (11.6)
Notched Charpy Impact Strength	ISO 179/1eA	kJ/m <sup>2</sup>	
-30°C (-22°F)			8
23°C (73°F)			9
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m <sup>2</sup>	
-30°C (-22°F)			220
23°C (73°F)			300

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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<b>Thermal</b>			
Deflection Temperature 0.45MPa	ISO 75-1/-2	°C (°F)	158 (316)
1.80MPa			94 (201)
Melting Temperature 10°C/min	ISO 11357-1/-3	°C (°F)	178 (352)
CLTE, Parallel -40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C (E-4/F)	1.0 (0.56)
23 - 55°C (73 - 130°F)			1.1 (0.61)
55 - 100°C (130 - 212°F)			1.5 (0.82)
CLTE, Normal -40 - 23°C (-40 - 73°F)	ISO 11359-1/-2	E-4/C (E-4/F)	1.0 (0.56)
23 - 55°C (73 - 130°F)			1.1 (0.61)
55 - 100°C (130 - 212°F)			1.6 (0.9)
Vicat Softening Temperature 50N	ISO 306	°C (°F)	157 (315)
<b>Rheological</b>			
Melt Mass-Flow Rate 190°C, 2.16kg	ISO 1133	g/10 min	15
<b>Electrical</b>			
Surface Resistivity	IEC 60093	ohm	1E15
Volume Resistivity	IEC 60093	ohm m	1E12
Electric Strength 1.0mm	IEC 60243-1	kV/mm (V/mil)	33 (838)
Relative Permittivity 1E2 Hz	IEC 60250		3.9
1E6 Hz			3.9
Dissipation Factor 1E2 Hz	IEC 60250	E-4	200
1E6 Hz			60
CTI	IEC 60112	V	600

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<b>Flammability</b>			
Flammability Classification 0.75mm	IEC 60695-11-10		HB
Flammability Classification 0.75mm	UL94		HB
Oxygen Index	ISO 4589-1/-2	%	22
High Amperage Arc Ignition Resistance 0.75mm	UL 746A	arcs	200
Hot Wire Ignition 0.75mm	UL 746A	s	8
1.5mm			11
3.0mm			15
<b>Temperature Index</b>			
RTI, Electrical 0.75mm	UL 746B	°C	50
1.5mm			110
3.0mm			110
RTI, Impact 0.75mm	UL 746B	°C	50
1.5mm			85
3.0mm			90
RTI, Strength 0.75mm	UL 746B	°C	50
1.5mm			90
3.0mm			95

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Property	Test Method	Units	Value
<b>Other</b>			
Density	ISO 1183	kg/m <sup>3</sup> (g/cm <sup>3</sup> )	1420 (1.42)
Hardness, Rockwell	ISO 2039/2		
Scale M			92
Scale R			120
Water Absorption	ISO 62, Similar to	%	
Equilibrium 50%RH			0.3
Immersion 24h			0.6
Saturation, immersed			1.4
Molding Shrinkage	ISO 294-4	%	
Normal, 2.0mm			1.9
Parallel, 2.0mm			2.0
<b>Processing</b>			
Melt Temperature Range		°C (°F)	210-220 (410-430)
Melt Temperature Optimum		°C (°F)	215 (420)
Mold Temperature Range		°C (°F)	80-100 (175-210)
Mold Temperature Optimum		°C (°F)	90 (195)
Drying Time, Dehumidified Dryer		h	2-4
Drying Temperature		°C (°F)	80 (175)
Processing Moisture Content		%	<0.2
Hold Pressure Range		MPa (kpsi)	80-100 (12-15)

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