



# Delrin®

acetal resin

## Delrin® 511P NC010

### Medium Viscosity Acetal, Enhanced Crystallization

Delrin® 511P is a new grade with the improved thermal stability of Delrin® 500P with modifications for more precise molding (reduced warpage, less shrinkage, fewer voids). Delrin® 511P has higher tensile strength and flexural modulus than Delrin® 500P.

Property	Test Method	Units	Value
<b>Mechanical</b>			
Tensile Strength at Yield 5mm/min (0.2in/min)	ASTM D 638	MPa (kpsi)	72 (10.4)
Elongation at Yield 5mm/min (0.2in/min)	ASTM D 638	%	11
Elongation at Break 5mm/min (0.2in/min)	ASTM D 638	%	33
Tensile Modulus 5mm/min (0.2in/min)	ASTM D 638	MPa (kpsi)	3380 (490)
Flexural Modulus	ASTM D 790	MPa (kpsi)	3300 (480)
Flexural Stress Strain 5%	ASTM D 790	MPa (kpsi)	105 (15)
Izod Impact	ASTM D 256	J/m (ft lb/in)	73 (1.4)
Unnotched Impact	ASTM D 4812	J/m (ft lb/in)	NB (NB)
<b>Thermal</b>			
Heat Deflection Temperature 0.45MPa (66psi), Not Annealed	ASTM D 648	°C (°F)	169 (336)
1.8MPa (264psi), Not Annealed			114 (237)
CLTE, Parallel 23 - 55C (73 - 130F)	ASTM E 831	E-4/C	1.11
CLTE, Normal 23 - 55C (73 - 130F)	ASTM E 831	E-4/C	1.17
Melting Point	ASTM D 3418	°C (°F)	178 (352)
<b>Flow</b>			
Melt Flow Rate 1.05kg at 190C	ASTM D 1238	g/10 min	7

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc.  
Mechanical properties measured at 23°C (73°F) unless otherwise stated.

Delrin® is a DuPont registered trademark.

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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 or additives 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. 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-51459 or H-50102.

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Property	Test Method	Units	Value
<b>Electrical</b>			
Surface Resistivity	ASTM D 257	ohm	3 E14
Volume Resistivity	ASTM D 257	ohm cm	7 E14
Dielectric Strength, Short Time 3.2mm (0.126in)	ASTM D 149	kV/mm (V/mil)	18 (460)
Dielectric Constant 1E6 Hz	ASTM D 150		3.7
Dissipation Factor 1E6 Hz	ASTM D 150		0.005
<b>Flammability</b>			
Rating @ Min. Thickness	UL94		HB
Min. Thickness Tested	UL94	mm (in)	0.75 (0.03)
<b>Other</b>			
Specific Gravity	ASTM D 792		1.42
Water Absorption Immersion 24h	ASTM D 570	%	0.3
Mold Shrinkage Flow, 24h, 3.2mm (0.126in)	ASTM D 955	%	1.5-1.8
Transverse, 24h, 3.2mm (0.126in)			1.6-1.9
<b>Processing</b>			
Melt Temperature Range		°C (°F)	210-220 (410-430)
Mold Temperature Range		°C (°F)	80-100 (175-210)
Processing Moisture Content		%	<0.2

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