

DuPont™ Delrin®

acetal resin

Delrin® 500P NC010

Delrin® 500P is a medium viscosity acetal homopolymer for injection molding. It has improved processing thermal stability, good mechanical properties, and low volatile emissions.

Property	Test Method	Units	Value
Identification			
Resin Identification	ISO 1043		POM
Part Marking Code	ISO 11469		>POM<
Mechanical			
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 ²	
-30°C (-22°F)			8
23°C (73°F)			9
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m ²	
-30°C (-22°F)			240
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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Property	Test Method	Units	Value
Thermal			
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)
Specific Heat	ISO 11357-4	J/kg K (Btu/lb F)	3000 (0.71)
Vicat Softening Temperature 50N	ISO 306	°C (°F)	155 (310)
Rheological			
Melt Mass-Flow Rate 190°C, 2.16kg	ISO 1133	g/10 min	15
Melt Volume-Flow Rate	ISO 1133	cm ³ /10 min (ml/10 min)	13
Electrical			
Surface Resistivity	IEC 60093	ohm	1E15
Volume Resistivity	IEC 60093	ohm m	1E12
Relative Permittivity 1E2 Hz	IEC 60250		3.9
1E6 Hz			3.9
Dissipation Factor 1E6 Hz	IEC 60250	E-4	60
CTI	IEC 60112	V	600

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Property	Test Method	Units	Value
Flammability			
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
Temperature Index			
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
Other			
Density	ISO 1183	kg/m ³ (g/cm ³)	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
Processing - Injection Molding			
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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