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
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)			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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Property	Test Method	Units	Value
Thermal			
Deflection Temperature	ISO 75-1/-2	°C (°F)	
0.45MPa			158 (316)
1.80MPa			94 (201)
Melting Temperature	ISO 11357-1/-3	°C (°F)	
10°C/min			178 (352)
CLTE, Normal	ISO 11359-1/-2	E-4/C (E-4/F)	
-40 - 23°C (-40 - 73°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)
CLTE, Parallel	ISO 11359-1/-2	E-4/C (E-4/F)	
-40 - 23°C (-40 - 73°F)			1.0 (0.56)
23 - 55°C (73 - 130°F)			1.1 (0.63)
55 - 100°C (130 - 212°F)			1.5 (0.82)
Vicat Softening Temperature	ISO 306	°C (°F)	
50N			157 (315)
Rheological			
Melt Mass-Flow Rate	ISO 1133	g/10 min	
190°C, 2.16kg			15
Electrical			
Surface Resistivity	IEC 60093	ohm	1E15
Volume Resistivity	IEC 60093	ohm m	1E12
Electric Strength	IEC 60243-1	kV/mm (V/mil)	
1.0mm			33 (838)
Relative Permittivity	IEC 60250		
1E2 Hz			3.9
1E6 Hz			3.9
Dissipation Factor	IEC 60250	E-4	
1E2 Hz			200
1E6 Hz			60
CTI	IEC 60112	V	600

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