

DuPont™ Delrin®

acetal resin

Delrin® 500CL NC010

Delrin® 500CL is a medium viscosity acetal homopolymer resin containing a chemical lubricant, designed for low wear and friction against metals.

Property	Test Method	Units	Value
Identification			
Resin Identification	ISO 1043		POM
Part Marking Code	ISO 11469		>POM<
Mechanical			
Yield Stress	ISO 527	MPa (kpsi)	67 (9.7)
Yield Strain	ISO 527	%	15
Strain at Break	ISO 527	%	
50mm/min			45
Nominal Strain at Break	ISO 527	%	25
Tensile Modulus	ISO 527	MPa (kpsi)	3100 (450)
Flexural Modulus	ISO 178	MPa (kpsi)	2900 (420)
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)			290
23°C (73°F)			350

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 (315)
1.80MPa			90 (194)
Melting Temperature 10°C/min	ISO 11357-1/-3	°C (°F)	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)			1.7 (0.94)
CLTE, Parallel	ISO 11359-1/-2	E-4/C (E-4/F)	
-40 - 23°C (-40 - 73°F)			0.92 (0.51)
-40 - 30°C (-40 - 86°F)			1.0 (0.58)
23 - 55°C (73 - 130°F)			1.12 (0.62)
55 - 100°C (130 - 212°F)			1.6 (0.89)
Vicat Softening Temperature 50N	ISO 306	°C (°F)	159 (318)
Rheological			
Melt Mass-Flow Rate 190°C, 2.16kg	ISO 1133	g/10 min	15
Electrical			
Surface Resistivity	IEC 60093	ohm	>1E15
Relative Permittivity 1E6 Hz	IEC 60250		3.5
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	IEC 60695-11-10		
0.75mm			
1.5mm			
3.0mm			HB
Oxygen Index	ISO 4589-1/-2	%	22
Temperature Index			
RTI, Electrical	UL 746B	°C	
0.75mm			
1.5mm			
3.0mm			50
RTI, Impact	UL 746B	°C	
0.75mm			
1.5mm			
3.0mm			100
RTI, Strength	UL 746B	°C	
0.75mm			
1.5mm			
3.0mm			100
0.75mm			50
1.5mm			80
3.0mm			80
Other			
Density	ISO 1183	kg/m ³ (g/cm ³)	1410 (1.41)
Hardness, Rockwell	ISO 2039/2		
Scale M			92
Scale R			120
Water Absorption	ISO 62, Similar to	%	
Equilibrium 50%RH			
Saturation, immersed			0.25
Molding Shrinkage	ISO 294-4	%	
Normal, 2.0mm			
Parallel, 2.0mm			
			1
			1.9
			1.9

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Property	Test Method	Units	Value
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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