

DuPont™ Delrin®

acetal resin

Delrin® 500TL NC010

Delrin® 500TL is a medium viscosity acetal homopolymer resin containing 1.5% Teflon® PTFE Micropowder. It is designed for applications requiring moderate low wear and friction against steel, itself, or other plastics.

Property	Test Method	Units	Value
Identification			
Resin Identification	ISO 1043		POM-SD
Part Marking Code	ISO 11469		>POM-SD<
Mechanical			
Yield Stress	ISO 527	MPa (kpsi)	71 (10.3)
Yield Strain	ISO 527	%	13
Strain at Break	ISO 527	%	
50mm/min			28
Nominal Strain at Break	ISO 527	%	20
Tensile Modulus	ISO 527	MPa (kpsi)	3300 (479)
Flexural Modulus	ISO 178	MPa (kpsi)	3100 (450)
Notched Charpy Impact Strength	ISO 179/1eA	kJ/m ²	
-30°C (-22°F)			5
23°C (73°F)			6
Unnotched Charpy Impact Strength	ISO 179/1eU	kJ/m ²	
-30°C (-22°F)			160
23°C (73°F)			170

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 (315)
1.80MPa			100 (210)
Melting Temperature	ISO 11357-1/-3	°C (°F)	
10°C/min			178 (352)
CLTE, Parallel	ISO 11359-1/-2	E-4/C (E-4/F)	
-40 - 23°C (-40 - 73°F)			0.9 (0.5)
23 - 55°C (73 - 130°F)			1.0 (0.56)
55 - 100°C (130 - 212°F)			1.4 (0.8)
CLTE, Normal	ISO 11359-1/-2	E-4/C (E-4/F)	
-40 - 23°C (-40 - 73°F)			0.9 (0.5)
23 - 55°C (73 - 130°F)			1.0 (0.56)
55 - 100°C (130 - 212°F)			1.5 (0.8)
Rheological			
Melt Mass-Flow Rate	ISO 1133	g/10 min	
190°C, 2.16kg			14
Electrical			
Volume Resistivity	IEC 60093	ohm m	1E12
Electric Strength	IEC 60243-1	kV/mm	32
Relative Permittivity	IEC 60250		
1E2 Hz			3.6
1E6 Hz			3.6
CTI	IEC 60112	V	600
Flammability			
Flammability Classification	IEC 60695-11-10		
1.5mm			HB
3.0mm			HB
Oxygen Index	ISO 4589-1/-2	%	18

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Property	Test Method	Units	Value
Temperature Index			
RTI, Electrical	UL 746B	°C	
1.5mm			105
3.0mm			105
RTI, Impact	UL 746B	°C	
1.5mm			85
3.0mm			85
RTI, Strength	UL 746B	°C	
1.5mm			90
3.0mm			90
Other			
Density	ISO 1183	kg/m ³ (g/cm ³)	1410 (1.41)
Water Absorption	ISO 62, Similar to	%	
Equilibrium 50%RH			0.17
Immersion 24h, 2.0mm			0.33
Saturation, immersed			0.9
Molding Shrinkage	ISO 294-4	%	
Normal, 2.0mm			1.7
Parallel, 2.0mm			1.8
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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