





DuPont Mobility and Materials Delrin® 1700P NC010 Acetal (POM) Homopolymer (Unverified Data**)

Categories: [Polymer](#); [Thermoplastic](#); [Acetal \(Polyoxymethylene, POM\)](#); [Acetal Homopolymer, Unreinforced](#)







Material Notes: Delrin® 1700P is an ultra low viscosity acetal homopolymer for molding in multicavity molds, complex shapes, long flow paths, and thin sections that are difficult to fill. It offers improved processing thermal stability.

Vendors: No vendors are listed for this material. Please [click here](#) if you are a supplier and would like information on how to add your listing to this material.

Physical Properties	Metric	English	Comments
Specific Gravity	1.42 g/cc	1.42 g/cc	ASTM D 792
Density	1.42 g/cc	0.0513 lb/in ³	ISO 1183
Water Absorption	0.40 %	0.40 %	Immersion 24h; ASTM D 570
Moisture Absorption at Equilibrium	0.28 %	0.28 %	50% RH; ASTM D 570
	0.30 %	0.30 %	50% RH; ISO 62, Similar to
Water Absorption at Saturation	1.4 %	1.4 %	ASTM D 570
	1.4 %	1.4 %	Immersed; ISO 62, Similar to
Linear Mold Shrinkage, Flow	0.019 cm/cm @Thickness 2.00 mm	0.019 in/in @Thickness 0.0787 in	ISO 294-4
	0.014 - 0.017 cm/cm @Thickness 3.17 mm, Time 86400 sec	0.014 - 0.017 in/in @Thickness 0.125 in, Time 24.0 hour	ASTM D955
Linear Mold Shrinkage, Transverse	0.018 cm/cm @Thickness 2.00 mm	0.018 in/in @Thickness 0.0787 in	ISO 294-4
	0.015 - 0.018 cm/cm @Thickness 3.17 mm, Time 86400 sec	0.015 - 0.018 in/in @Thickness 0.125 in, Time 24.0 hour	ASTM D955
Melt Flow 	17 g/10 min @Load 1.05 kg, Temperature 190 °C	17 g/10 min @Load 2.31 lb, Temperature 374 °F	ASTM D 1238
	32 g/10 min @Load 2.16 kg, Temperature 190 °C	32 g/10 min @Load 4.76 lb, Temperature 374 °F	cm3/10 min; ISO 1133
	37 g/10 min @Load 2.16 kg, Temperature 190 °C	37 g/10 min @Load 4.76 lb, Temperature 374 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	92	92	ISO 2039/2
Hardness, Rockwell R	120	120	ISO 2039/2
	120	120	ASTM D 785
Tensile Strength, Ultimate 	31.0 MPa @Temperature 100 °C	4500 psi @Temperature 212 °F	5mm/min (0.2in/min); ASTM D 638
	71.0 MPa @Temperature 23.0 °C	10300 psi @Temperature 73.4 °F	5mm/min (0.2in/min); ASTM D 638
	90.0 MPa @Temperature -40.0 °C	13100 psi @Temperature -40.0 °F	5mm/min (0.2in/min); ASTM D 638
Tensile Strength, Yield 	28.0 MPa @Temperature 100 °C	4060 psi @Temperature 212 °F	5mm/min (0.2in/min); ASTM D 638
	71.0 MPa @Temperature 23.0 °C	10300 psi @Temperature 73.4 °F	5mm/min (0.2in/min); ASTM D 638
	71.0 MPa @Temperature 23.0 °C	10300 psi @Temperature 73.4 °F	ISO 527
	88.0 MPa @Temperature -40.0 °C	12800 psi @Temperature -40.0 °F	5mm/min (0.2in/min); ASTM D 638
Elongation at Break	15 %	15 %	ISO 527
	15 %	15 %	50mm/min; ISO 527
	10 % @Temperature -40.0 °C	10 % @Temperature -40.0 °F	5mm/min (0.2in/min); ASTM D 638
	15 % @Temperature 23.0 °C	15 % @Temperature 73.4 °F	5mm/min (0.2in/min); ASTM D 638
	>= 150 % @Temperature 100 °C	>= 150 % @Temperature 212 °F	5mm/min (0.2in/min); ASTM D 638

Elongation at Yield		@Temperature 100 °C 8.0 % 8.0 % @Temperature -40.0 °C 8.0 % @Temperature 23.0 °C 8.0 % @Temperature 100 °C 3.50 GPa 0.930 GPa @Temperature 100 °C 3.56 GPa @Temperature 23.0 °C 3.62 GPa @Temperature -40.0 °C 110 MPa 0.970 GPa	@Temperature 212 °F 8.0 % 8.0 % @Temperature -40.0 °F 8.0 % @Temperature 73.4 °F 8.0 % @Temperature 212 °F 508 ksi 135 ksi @Temperature 212 °F 516 ksi @Temperature 73.4 °F 525 ksi @Temperature -40.0 °F 16000 psi 141 ksi	ISO 527 5mm/min (0.2in/min); ASTM D 638 5mm/min (0.2in/min); ASTM D 638 5mm/min (0.2in/min); ASTM D 638 ISO 527 5mm/min (0.2in/min); ASTM D 638 5mm/min (0.2in/min); ASTM D 638 5mm/min (0.2in/min); ASTM D 638 @ 5% Strain; ASTM D 790 ASTM D 790
Tensile Modulus		@Temperature 100 °C 3.30 GPa @Temperature 23.0 °C 3.38 GPa @Temperature 23.0 °C 4.14 GPa @Temperature -40.0 °C 67.0 MPa 0.590 J/cm @Temperature 23.0 °C 6.00 kJ/m ² @Temperature -40.0 °C 6.00 kJ/m ² @Temperature 23.0 °C 14.0 J/cm ² @Temperature -30.0 °C 15.0 J/cm ² @Temperature 23.0 °C 0.500 J/cm ² @Temperature -30.0 °C 0.600 J/cm ² @Temperature 23.0 °C 2800 MPa 1500 MPa	@Temperature 212 °F 479 ksi @Temperature 73.4 °F 490 ksi @Temperature 73.4 °F 600 ksi @Temperature -40.0 °F 9720 psi 1.11 ft-lb/in @Temperature 73.4 °F 2.86 ft-lb/in ² @Temperature -40.0 °F 2.86 ft-lb/in ² @Temperature 73.4 °F 66.6 ft-lb/in ² @Temperature -22.0 °F 71.4 ft-lb/in ² @Temperature 73.4 °F 2.38 ft-lb/in ² @Temperature -22.0 °F 2.86 ft-lb/in ² @Temperature 73.4 °F 406000 psi 218000 psi	ISO 178 ASTM D 790 ASTM D 790 ASTM D 732 ASTM D 256 ISO 180/1A ISO 180/1A ISO 179/1eU ISO 179/1eU ISO 179/1eA ISO 179/1eA ISO 899 ISO 899
Flexural Yield Strength				
Flexural Modulus				
Shear Strength				
Izod Impact, Notched				
Izod Impact, Notched (ISO)				
Charpy Impact Unnotched				
Charpy Impact, Notched				
Tensile Creep Modulus, 1 hour				
Tensile Creep Modulus, 1000 hours				
Electrical Properties				
		Metric	English	Comments
Volume Resistivity		1.00e+14 ohm-cm 1.00e+14 ohm-cm	1.00e+14 ohm-cm 1.00e+14 ohm-cm	ASTM D 257 IEC 60093
Surface Resistance		6.00e+14 ohm	6.00e+14 ohm	ASTM D 257
Dielectric Constant		3.8 @Frequency 100 Hz 3.9 @Frequency 1.00e+6 Hz 3.7 @Frequency 1.00e+6 Hz, Temperature 23.0 °C	3.8 @Frequency 100 Hz 3.9 @Frequency 1.00e+6 Hz 3.7 @Frequency 1.00e+6 Hz, Temperature 73.4 °F	IEC 60250 IEC 60250 ASTM D 150
Dielectric Strength		17.0 kV/mm @Thickness 3.17 mm 32.0 kV/mm @Thickness 1.00 mm	432 kV/in @Thickness 0.125 in 813 kV/in @Thickness 0.0394 in	Short time; ASTM D149 IEC 60243-1
Dissipation Factor		0.0050 @Frequency 1.00e+6 Hz 0.0050 @Frequency 1.00e+6 Hz 0.018 @Frequency 100 Hz	0.0050 @Frequency 1.00e+6 Hz 0.0050 @Frequency 1.00e+6 Hz 0.018 @Frequency 100 Hz	ASTM D 150 IEC 60250 IEC 60250
Comparative Tracking Index		600 V	600 V	IEC 60112

	<u>600 V</u> @Thickness 3.00 mm	<u>600 V</u> @Thickness 0.118 in	UL 746A
Thermal Properties	Metric	English	Comments
CTE, linear 	<u>100</u> $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature 23.0 - 55.0 $^\circ\text{C}$	<u>55.6</u> $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature 73.4 - 131 $^\circ\text{F}$	ASTM E 831
	<u>100</u> $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature 23.0 - 55.0 $^\circ\text{C}$	<u>55.6</u> $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature 73.4 - 131 $^\circ\text{F}$	ISO 11359-1/-2
	<u>104</u> $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature -40.0 - 30.0 $^\circ\text{C}$	<u>57.8</u> $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature -40.0 - 86.0 $^\circ\text{F}$	ASTM E 831
	<u>104</u> $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature -40.0 - 30.0 $^\circ\text{C}$	<u>57.8</u> $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature -40.0 - 86.0 $^\circ\text{F}$	ISO 11359-1/-2
	<u>137</u> $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature 60.0 - 105 $^\circ\text{C}$	<u>76.1</u> $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature 140 - 221 $^\circ\text{F}$	ASTM E 831
	<u>137</u> $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature 60.0 - 105 $^\circ\text{C}$	<u>76.1</u> $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature 140 - 221 $^\circ\text{F}$	ISO 11359-1/-2
	<u>149</u> $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature 105 - 150 $^\circ\text{C}$	<u>82.8</u> $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature 221 - 302 $^\circ\text{F}$	ASTM E 831
	<u>149</u> $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature 105 - 150 $^\circ\text{C}$	<u>82.8</u> $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature 221 - 302 $^\circ\text{F}$	ISO 11359-1/-2
CTE, linear, Transverse to Flow 	<u>100</u> $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature 23.0 - 55.0 $^\circ\text{C}$	<u>55.6</u> $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature 73.4 - 131 $^\circ\text{F}$	ASTM E 831
	<u>100</u> $\mu\text{m}/\text{m}\cdot^\circ\text{C}$ @Temperature 23.0 - 55.0 $^\circ\text{C}$	<u>55.6</u> $\mu\text{in}/\text{in}\cdot^\circ\text{F}$ @Temperature 73.4 - 131 $^\circ\text{F}$	ISO 11359-1/-2
Melting Point	<u>178</u> $^\circ\text{C}$	<u>352</u> $^\circ\text{F}$	ASTM D 3418
	<u>178</u> $^\circ\text{C}$	<u>352</u> $^\circ\text{F}$	10 $^\circ\text{C}/\text{min}$; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	<u>165</u> $^\circ\text{C}$	<u>329</u> $^\circ\text{F}$	ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	<u>165</u> $^\circ\text{C}$	<u>329</u> $^\circ\text{F}$	Not Annealed; ASTM D 648
	<u>102</u> $^\circ\text{C}$	<u>216</u> $^\circ\text{F}$	ISO 75-1/-2
	<u>103</u> $^\circ\text{C}$	<u>217</u> $^\circ\text{F}$	Not Annealed; ASTM D 648
	<u>115</u> $^\circ\text{C}$	<u>239</u> $^\circ\text{F}$	Annealed; ISO 75-1/-2
UL RTI, Electrical 	<u>50.0</u> $^\circ\text{C}$ @Thickness 0.750 mm	<u>122</u> $^\circ\text{F}$ @Thickness 0.0295 in	UL 746B
	<u>110</u> $^\circ\text{C}$ @Thickness 3.00 mm	<u>230</u> $^\circ\text{F}$ @Thickness 0.118 in	UL 746B
	<u>110</u> $^\circ\text{C}$ @Thickness 1.50 mm	<u>230</u> $^\circ\text{F}$ @Thickness 0.0591 in	UL 746B
UL RTI, Mechanical with Impact 	<u>50.0</u> $^\circ\text{C}$ @Thickness 0.750 mm	<u>122</u> $^\circ\text{F}$ @Thickness 0.0295 in	UL 746B
	<u>85.0</u> $^\circ\text{C}$ @Thickness 1.50 mm	<u>185</u> $^\circ\text{F}$ @Thickness 0.0591 in	UL 746B
	<u>90.0</u> $^\circ\text{C}$ @Thickness 3.00 mm	<u>194</u> $^\circ\text{F}$ @Thickness 0.118 in	UL 746B
UL RTI, Mechanical without Impact 	<u>50.0</u> $^\circ\text{C}$ @Thickness 0.750 mm	<u>122</u> $^\circ\text{F}$ @Thickness 0.0295 in	UL 746B
	<u>90.0</u> $^\circ\text{C}$ @Thickness 1.50 mm	<u>194</u> $^\circ\text{F}$ @Thickness 0.0591 in	UL 746B
	<u>95.0</u> $^\circ\text{C}$ @Thickness 3.00 mm	<u>203</u> $^\circ\text{F}$ @Thickness 0.118 in	UL 746B
Flammability, UL94 	HB @Thickness 0.750 mm	HB @Thickness 0.0295 in	UL94
	HB @Thickness 1.50 mm	HB @Thickness 0.0591 in	UL94
	HB @Thickness 1.50 mm	HB @Thickness 0.0591 in	IEC 60695-11-10
	HB @Thickness 0.750 mm	HB @Thickness 0.0295 in	IEC 60695-11-10
	HB @Thickness 3.00 mm	HB @Thickness 0.118 in	UL94
	HB @Thickness 3.00 mm	HB @Thickness 0.118 in	IEC 60695-11-10

Processing Properties	Metric	English	Comments
Melt Temperature	215 °C	419 °F	Optimum; Injection Molding
	210 - 220 °C	410 - 428 °F	Injection Molding
Mold Temperature	90.0 °C	194 °F	Optimum; Injection Molding
	80.0 - 100 °C	176 - 212 °F	Injection Molding
Drying Temperature	80.0 °C	176 °F	Injection Molding
Dry Time	2 - 4 hour	2 - 4 hour	Dehumidified Dryer; Injection Molding
Moisture Content	<= 0.20 %	<= 0.20 %	Injection Molding
Descriptive Properties			
Color	Natural		
Drying Recommended	Not normally required unless moisture content of resin exceeds recommended level		
Features	Dimensional Stability, Good Viscosity, Low		
Forms	Pellets		
Generic	Acetal (POM) Homopolymer		
Part Marking Code	>POM<		ISO 11469
Processing Method	Extrusion Injection Molding		
Product Category	Unreinforced Resins		
Resin Identification	POM		ISO 1043
Uses	Parts, Engineering Parts, Thin-walled		

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