

DUPONT Delrin[®] 500TL

Teflon[®] Lubricated Medium Viscosity Acetal Homopolymer with Low Wear and Low Friction
Information provided by DuPont; Delrin was sold by DuPont in 2023.

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
Density	1.43 g/cc	0.0517 lb/in ³	ISO 1183
Water Absorption	0.90 % @Thickness 2.00 mm	0.90 % @Thickness 0.0787 in	Sim. to ISO 62
Moisture Absorption	0.170 % @Thickness 2.00 mm	0.170 % @Thickness 0.0787 in	Sim. to ISO 62
Linear Mold Shrinkage, Flow	0.018 cm/cm	0.018 in/in	ISO 294-4, 2577
Linear Mold Shrinkage, Transverse	0.017 cm/cm	0.017 in/in	ISO 294-4, 2577
Melt Flow	12 g/10 min @Load 2.16 kg, Temperature 190 °C	12 g/10 min @Load 4.76 lb, Temperature 374 °F	cm ³ /10min Volumetric; ISO 1133
	14 g/10 min @Load 2.16 kg, Temperature 190 °C	14 g/10 min @Load 4.76 lb, Temperature 374 °F	ISO 1133
Mechanical Properties	Metric	English	Comments
Tensile Strength, Yield	71.0 MPa	10300 psi	ISO 527-1/-2
Elongation at Break	20 %	20 %	Nominal; ISO 527-1/-2
Elongation at Yield	13 %	13 %	ISO 527-1/-2
Tensile Modulus	3.30 GPa	479 ksi	ISO 527-1/-2
Flexural Modulus	3.10 GPa	450 ksi	ISO 178
Poissons Ratio	0.37	0.37	
Izod Impact, Notched (ISO)	6.00 kJ/m ² @Temperature -40.0 °C	2.86 ft-lb/in ² @Temperature -40.0 °F	ISO 180/1A
	6.00 kJ/m ² @Temperature 23.0 °C	2.86 ft-lb/in ² @Temperature 73.4 °F	ISO 180/1A
Charpy Impact Unnotched	16.0 J/cm ² @Temperature -30.0 °C	76.1 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eU
	17.0 J/cm ² @Temperature 23.0 °C	80.9 ft-lb/in ² @Temperature 73.4 °F	ISO 179/1eU
Charpy Impact, Notched	0.400 J/cm ² @Temperature -30.0 °C	1.90 ft-lb/in ² @Temperature -22.0 °F	ISO 179/1eA
	0.500 J/cm ² @Temperature 23.0 °C	2.38 ft-lb/in ² @Temperature 73.4 °F	ISO 179/1eA
Electrical Properties	Metric	English	Comments
Volume Resistivity	1.00e+14 ohm-cm	1.00e+14 ohm-cm	IEC 62631-3-1
Dielectric Constant	3.6 @Frequency 1e+6 Hz	3.6 @Frequency 1e+6 Hz	IEC 62631-2-1
	3.6 @Frequency 100 Hz	3.6 @Frequency 100 Hz	IEC 62631-2-1
Comparative Tracking Index	600 V	600 V	IEC 60112

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	100 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	55.6 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-1/-2
CTE, linear, Transverse to Flow	100 $\mu\text{m}/\text{m}\cdot^\circ\text{C}$	55.6 $\mu\text{in}/\text{in}\cdot^\circ\text{F}$	ISO 11359-1/-2
Melting Point	178 $^\circ\text{C}$	352 $^\circ\text{F}$	10 $^\circ\text{C}/\text{min}$; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	165 $^\circ\text{C}$	329 $^\circ\text{F}$	ISO 75-1/-2
Deflection Temperature at 1.8 MPa (264 psi)	103 $^\circ\text{C}$	217 $^\circ\text{F}$	ISO 75-1/-2
Flammability, UL94	HB @Thickness 1.50 mm	HB @Thickness 0.0591 in	IEC 60695-11-10
	HB @Thickness 3.00 mm	HB @Thickness 0.118 in	IEC 60695-11-10
Flame Spread	63.0 mm/min @Thickness 1.00 mm	2.48 in/min @Thickness 0.0394 in	ISO 3795 (FMVSS 302)

Processing Properties	Metric	English	Comments
Melt Temperature	215 $^\circ\text{C}$	419 $^\circ\text{F}$	Optimum, Injection
	210 - 220 $^\circ\text{C}$	410 - 428 $^\circ\text{F}$	Range, Injection
Mold Temperature	90.0 $^\circ\text{C}$	194 $^\circ\text{F}$	Optimum, Injection
	80.0 - 100 $^\circ\text{C}$	176 - 212 $^\circ\text{F}$	Injection
Drying Temperature	80.0 $^\circ\text{C}$	176 $^\circ\text{F}$	Injection
Dry Time	2.00 - 4.00 hour	2.00 - 4.00 hour	Injection, Dehumidified Dryer
Moisture Content	$\leq 0.20\%$	$\leq 0.20\%$	Injection
Hold Pressure	80.0 - 100 MPa	11600 - 14500 psi	Injection
	100 MPa	14500 psi	Injection
Annealing Temperature	160 $^\circ\text{C}$	320 $^\circ\text{F}$	Optional; 2 mm/min; Injection

Descriptive Properties		
Additives	Release agent	
Annealing time (min/mm)	30	Optional, Injection
Drying Recommended	yes	Injection
FMVSS Class	B	ISO 3795 (FMVSS 302)
Max. screw tangential speed (m/s)	0.3	Injection
Part Marking Code	>POM-SD<	ISO 11469
Polymer	POM-Z	
Processing Hold Pressure Time (s/mm)	8	Injection
Resin Identification	POM-SD	ISO 1043