

# DUPONT Delrin<sup>®</sup> 500AF

20% Teflon<sup>®</sup> Fiber Filled Medium Viscosity Acetal Homopolymer with Low Wear and Low Friction  
Information provided by DuPont; Delrin was sold by DuPont in 2023.

Physical Properties	Metric	English	Comments
Density	1.53 g/cc	0.0553 lb/in <sup>3</sup>	ISO 1183
Melt Density	1.28 g/cc @Temperature 215 °C	0.0462 lb/in <sup>3</sup> @Temperature 419 °F	
Water Absorption	0.25 % @Time 86400 sec	0.25 % @Time 24.0 hour	Immersion; Sim. to ISO 62
	1.0 % @Thickness 2.00 mm	1.0 % @Thickness 0.0787 in	Sim. to ISO 62
Moisture Absorption	0.200 % @Thickness 2.00 mm	0.200 % @Thickness 0.0787 in	Sim. to ISO 62
Linear Mold Shrinkage, Flow	0.020 cm/cm	0.020 in/in	ISO 294-4, 2577
Linear Mold Shrinkage, Transverse	0.014 cm/cm	0.014 in/in	ISO 294-4, 2577
Melt Flow	5.0 g/10 min @Load 2.16 kg, Temperature 190 °C	5.0 g/10 min @Load 4.76 lb, Temperature 374 °F	ISO 1133

Mechanical Properties	Metric	English	Comments
Hardness, Rockwell M	74	74	ISO 2039-2
Hardness, Rockwell R	119	119	ISO 2039-2
Tensile Strength at Break	50.0 MPa	7250 psi	ISO 527-1/-2
Elongation at Break	10 %	10 %	ISO 527-1/-2
Tensile Modulus	2.80 GPa	406 ksi	ISO 527-1/-2
Flexural Modulus	2.50 GPa	363 ksi	ISO 178
Compressive Strength	110 MPa	16000 psi	ISO 604
Poissons Ratio	0.37	0.37	
Izod Impact, Notched (ISO)	3.00 kJ/m <sup>2</sup> @Temperature 23.0 °C	1.43 ft-lb/in <sup>2</sup> @Temperature 73.4 °F	ISO 180/1A
Charpy Impact Unnotched	3.50 J/cm <sup>2</sup> @Temperature -30.0 °C	16.7 ft-lb/in <sup>2</sup> @Temperature -22.0 °F	ISO 179/1eU
	4.00 J/cm <sup>2</sup> @Temperature 23.0 °C	19.0 ft-lb/in <sup>2</sup> @Temperature 73.4 °F	ISO 179/1eU
Charpy Impact, Notched	0.300 J/cm <sup>2</sup> @Temperature -30.0 °C	1.43 ft-lb/in <sup>2</sup> @Temperature -22.0 °F	ISO 179/1eA
	0.300 J/cm <sup>2</sup> @Temperature 23.0 °C	1.43 ft-lb/in <sup>2</sup> @Temperature 73.4 °F	ISO 179/1eA

Electrical Properties	Metric	English	Comments
Surface Resistance	>= 1.00e+15 ohm	>= 1.00e+15 ohm	IEC 62631-3-2
Comparative Tracking Index	600 V	600 V	IEC 60112

Thermal Properties	Metric	English	Comments
CTE, linear, Parallel to Flow	110 µm/m-°C	61.1 µin/in-°F	ISO 11359-1/-2
CTE, linear, Transverse to Flow	100 µm/m-°C	55.6 µin/in-°F	ISO 11359-1/-2
Melting Point	178 °C	352 °F	10°C/min; ISO 11357-1/-3
Deflection Temperature at 0.46 MPa (66 psi)	160 °C	320 °F	ISO 75-1/-2

Deflection Temperature at 1.8 MPa (264 psi)	92.0 °C	198 °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	<= 80.0 mm/min @Thickness 1.00 mm	<= 3.15 in/min @Thickness 0.0394 in	ISO 3795 (FMVSS 302)

Processing Properties	Metric	English	Comments
Melt Temperature	195 - 205 °C	383 - 401 °F	Range, Extrusion
	200 °C	392 °F	Optimum, Extrusion
	215 °C	419 °F	Optimum, Injection
Mold Temperature	210 - 220 °C	410 - 428 °F	Range, Injection
	90.0 °C	194 °F	Optimum, Injection
Drying Temperature	80.0 - 100 °C	176 - 212 °F	Injection
	80.0 °C	176 °F	Injection
	75.0 - 85.0 °C	167 - 185 °F	Extrusion
Dry Time	2.00 - 4.00 hour	2.00 - 4.00 hour	Extrusion, Dehumidified Dryer
	2.00 - 4.00 hour	2.00 - 4.00 hour	Injection, Dehumidified Dryer
Moisture Content	<= 0.20 %	<= 0.20 %	Extrusion
	<= 0.20 %	<= 0.20 %	Injection
Hold Pressure	80.0 - 100 MPa	11600 - 14500 psi	Injection
	100 MPa	14500 psi	Injection
Annealing Temperature	160 °C	320 °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-SF20<	ISO 11469
Polymer	POM-Z20	
Processing Hold Pressure Time (s/mm)	8	Injection
Resin Identification	POM-SF20	ISO 1043