



MANUFACTURING CORPORATION

- Plastics Machining
- Spring Energized Seals
- Rotary Lip Seals

## Material Data Sheet

Material: Delrin® AF Blend

Delrin® AF Blend is a unique thermoplastic material for use in moving parts in which low friction and long wear life are important. It is a combination of PTFE fibers uniformly dispersed in Delrin acetal resin. This combination offers better wear characteristics than unfilled Delrin®. Delrin® AF Blend, supplied as a 2:1 blend of Delrin® AF 100 and Delrin 150 resins, has excellent sliding/friction properties. Bearings made of Delrin® AF Blend can operate at higher speeds while exhibiting reduced wear. These bearings are also essentially free of slip-stick behavior because the static and dynamic coefficient of friction are closer than with most plastics. Delrin® AF Blend retains 90% of the strength that is inherent in unmodified Delrin® acetal. Some properties are changed due to the addition of the softer PTFE fiber. The natural color of Delrin® AF Blend is dark brown.

Mechanical Properties	Test Method ASTM	Value	Units
Specific Gravity, 73°F	D792	1.5	
Tensile Strength, 73°F	D638	8,000	psi
Tensile Modulus of Elasticity, °F	D638	435,000	psi
Tensile Elongation ( at break), 73°F	D638	15	%
Flexural Strength, 73°F	D790	12,000	psi
Flexural Modulus of Elasticity, 73°F	D790	445,000	psi
Shear Strength, 73°F	D732	7,600	psi
Compressive Strength, 10% Deformation, 73°F	D695	16,000	psi
Compressive Modulus of Elasticity, 73°F	D695	350,000	psi
Hardness, Rockwell, Scale as noted, 73°F	D785	M85 (R115)	
Hardness, Durometer, Shore "D" Scale, 73°F	D2240	D83	
Izod Impact (notched), 73°F	D256 Type A	0.7	ft-lb/in of notch
Coefficient of Friction (Dry vs. Steel) Dynamic	QTM 55007	0.19	
Limiting PV (with 4:1 safety factor applied)	QTM 55007	8,300	ft.lbs./in. <sup>2</sup> min
Wear Factor "k" x 10 <sup>-10</sup>	QTM 55010	60	in. <sup>3</sup> -min/ft.lbs.hr
<b>Thermal Properties</b>			
Coefficient of Linear Thermal Expansion (-40°F to 300°F)	E-831 (TMA)	5 x 10 <sup>-5</sup>	in/in./°F
Heat Deflection Temperature 264 psi	D648	244	°F
TG-Glass transition (amorphous)	D3418	N/A	°F
Melting Point (Crystalline) peak	D3418	347	°F
Continuous Service Temperature in Air (Max.) (1)		180	°F
Thermal Conductivity	F433		BTU-in/hr-ft <sup>2</sup> -°F
<b>Electrical Properties</b>			
Dielectric Strength, Short Term	D149	400	Volts/mil
Surface Resistivity	EOS/ESD S11.11	>10 <sup>13</sup>	ohm/square
Dielectric Constant, 106 Hz	D150	3.1	
Dissipation Factor, 106 Hz	D150	0.01	
Flammability @ 3.1 mm (1/8 in.)	UL 94	HB	
FDA Compliant		No	

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\*The values shown in these and the following charts are typical, average properties. Actual values may differ due to variations in resin formulations and processing methods. These values are obtained from sources believed to be reliable, including the resin manufactures, converters and other published sources. However, they should not be used for specification or design purposes. Above information is provided by Quadrant EPP.