

Delrin® AF Blend, (Acetal homopolymer, PTFE-filled)

Delrin® AF Blend acetal is a unique thermoplastic material for use in moving parts in which low friction and long wear are important. It is a combination of Teflon® fibers uniformly dispersed in Delrin acetal resin. This combination produces a material that has strength, toughness, dimensional stability and good machinability, plus improved wear characteristics over unfilled Delrin.

Bearings made of Delrin AF Blend sustain high loads when operating at high speeds and show reduced wear. These bearings are also essentially free of slip-stick behavior because the static and dynamic coefficients of friction are closer than with most plastics. Delrin AF Blend retains much of the strength that is inherent in unmodified Delrin acetal. Some properties are changed due to the addition of the softer Teflon fiber. The natural color of Delrin AF Blend is dark brown.

Property	ASTM Test Method	Units	Delrin® AF Blend
Physical			
Specific Gravity	D792		1.5
Water Absorption Immersion, 24 hr	D570	%	0.2
Water Absorption Immersion, Sat	D570	%	1
Mechanical			
Tensile Strength	D638	psi	8,000
Tensile Modulus	D638	psi	435,000
Elongation	D638	%	15
Flexural Strength	D790	psi	12,000
Flexural Modulus	D790	psi	445,000
Shear Strength	D732	psi	7,600
Compressive Strength	D695, 10% Def.	psi	16,000
Compressive Modulus	D695	psi	350,000
Hardness, Rockwell	D785		M85, R115
Hardness, Durometer, Shore D Scale	D2240		83
Izod Impact (Notched)	D256 Type A	ft-lb/in	0.7
Coefficient of Friction, Dynamic	Dry vs. Steel, PTM55007		0.19
Limiting PV	PTM55007	psi-fpm	8300
k (wear) factor	PTM55007	10 ⁻¹⁰ in ³ -min/lb-ft-hr	60

Property	ASTM Test Method	Units	Delrin® AF Blend
Thermal			
Coefficient of Thermal Expansion	ASTM E831 (TMA)	°F	0.5 x 10 ⁻⁴
Deflection Temperature, @ 264 psi	D648	°F	244
Melting Point (Crystalline) Peak		°F	347
Continuous Service in Air (Max)	Without Load	°F	180
Flammability	UL94		HB
Electrical			
Dielectric Strength, Short Term	D149 (2)	V/mil	400
Surface Resistance	Lower Limit; EOS/ESD S11.11	ohm/square	10 ¹³
Dielectric Constant, 1 MHz	D150 (2)	3.1	
Dissipation Factor, 1 MHz	D150 (2)	0.01	

NOTE: The information contained herein are typical values intended for reference and comparison purposes only. They should NOT be used as a basis for design specifications or quality control. Contact us for manufacturers' complete material property datasheets. All values at 73°F (23°C) unless otherwise noted.

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