

Delrin® (Acetal Homopolymer)

Delrin® is a crystalline plastic that offers an excellent balance of properties that bridge the gap between metals and plastics. Delrin® possesses high tensile strength, creep resistance and toughness. It also exhibits low moisture absorption. It is chemically resistant to hydrocarbons, solvents and neutral chemicals. These properties along with its fatigue endurance make Delrin® ideal for many industrial applications.

Delrin®'s overall combination of physical, tribological and environmental properties make it ideal for many industrial wear and mechanical applications. Parts exposed to a moist or wet environment, such as pump and valve components, are especially appropriate. Other common uses for Delrin® include gears, bearings, bushings, rollers, fittings and electrical insulator parts.

- Good dimensional stability
- Low moisture absorption - Delrin® can operate in wet environments with little effect on performance or dimensions.
- Excellent machinability
- High fatigue endurance
- High strength and stiffness properties
- Superior impact and creep resistance
- Chemical resistance to fuels and solvents
- Natural grade is FDA, NSF and USDA compliant
- Good wear and abrasion properties - with its low coefficient of friction and hard and resilient surface, Delrin® is the material of choice in many wear applications.

Primary Specification (Resin) (Typical)
ASTM-D-4181 POM110B34330

Shapes Specification (Typical)
ASTM-D-6100 S-POM0111

Property	ASTM Test Method	Units	Delrin® 150
Physical			
Density	D792	lbs/in ³	0.0513
Specific Gravity	D792	g/cc	1.42
Water Absorption, @ 24 hours, 73°F	D570	%	0.25
Water Absorption, @ Saturation, 73°F	D570	%	0.9
Mechanical			
Tensile Strength @ Yield, 73°F	D638	psi	9,000
Tensile Modulus	D639	psi	350,000
Elongation @ Break, 73°F	D638	%	25
Flexural Strength, 73°F	D790	psi	11,500
Flexural Modulus, 73°F	D790	psi	420,000
Compressive Strength	D695	psi	5,200
Izod Impact Strength, 73°F	D256	ft-lbs/in	1.5
Rockwell Hardness, 73°F	D785	M (R) Scale	M 94 (120)
Wear Factor Against Steel, 40 psi, 50 fpm	D3702	in ³ /hr x 1/PV	55 x 10 ⁻¹⁰
Static Coefficient of Friction	D3702		-
Dynamic Coefficient of Friction, 40 psi, 50 fpm	D3702		0.2
Thermal			
Heat Deflection Temperature @ 66 psi	D648	°F	336
Heat Deflection Temperature @ 264 psi	D648	°F	257
Coefficient of Linear Thermal Expansion	D696	in/in/°F	6.8 x 10 ⁻⁵
Maximum Servicing Temperature, Intermittent		°F	300
Maximum Servicing Temperature, Long Term	UL746B	°F	185
Specific Heat		BTU/lb-°F	0.35
Thermal Conductivity			-
Melting Point	D2133	°F	347
Flammability	UL94		HB (1.47)

Property	ASTM Test Method	Units	Delrin® 150
Electrical			
Volume Resistivity	D257	ohm-cm	10 ¹⁵
Dielectric Strength	D149	V/mil	500
Dielectric Constant, @ 60 Hz, 73°F, 50% RH	D150		3.7
Dielectric Constant, @ 1 MHz	D150		3.7
Dissipation Factor, @ 60 HZ, 73°F	D150		0.005

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.

