

More About Performance Plastics

Tensile Strength—The maximum pulling force a material can withstand without breaking. It is usually measured in pounds per square inch (psi). A larger number indicates a stronger material.

Coefficient of Friction—The ratio of the frictional force between two surfaces in contact, to the force with which the surfaces press against each other. A lower value indicates a material that moves more easily, or with less friction.

Impact Strength—The ability of a material to withstand shock loading. Determined by the notched Izod test, which measures the effect on a material when it is suddenly impacted by a swinging pendulum. A larger number signifies greater impact resistance.

Flexural Modulus of Elasticity—The stiffness of a material. The higher the number, the stiffer the material; the lower the number, the more flexible it is.

Short-Term Dielectric Strength—The maximum voltage a material can withstand without rupture, measured as volts per millimeter of thickness. This is an indication of how effective the material is as an electrical insulator. A higher value signifies a better insulator.

Coefficient of Thermal Expansion—The amount a material increases in volume as the temperature rises. A smaller coefficient is an indicator of less thermal expansion.

Thermal Conductivity—The ability of heat to travel through a material. A lower value is an indicator of a better insulator.

Warning: Physical and mechanical properties are not guaranteed and are intended only as a basis for comparison. Data is not for design purposes.

	Nominal Density, lbs./in. ³	Tensile Strength, psi	Coefficient of Friction	Impact Strength, ft.-lbs./in.	Flexural Modulus of Elasticity, psi	Short-Term Dielectric Strength, volts/mil■	Coefficient of Thermal Expansion, in./in./° F	Thermal Conductivity, BTU/hr. x in./ft. ²	Water Absorption, %
Nylon 6/6	0.0412-0.0415	11,200-12,400	0.25-0.28	0.6-2.5	175,000-450,000	300-400	4.0 × 10 ⁻⁵ -6.1 × 10 ⁻⁵	1.6-1.7	1.2-2.8
MDS-Filled Nylon 6/6	0.0412	11,000-11,500	0.20-0.28	0.8-1.2	410,000-450,000	300-540	4.0 × 10 ⁻⁵ -4.6 × 10 ⁻⁵	1.6-1.7	1.2
Extruded Nylon 6/12	0.0383	8,000	0.31	0.9	300,000	Not Rated	5.0 × 10 ⁻⁵	Not Rated	0.25
Kevlar-Filled Nylon	0.043	17,300	0.32	1.2	802,000	350	3.5 × 10 ⁻⁵	Not Rated	1.2
Cast Nylon 6	0.0415-0.0422	10,000-13,500	0.22	0.4-0.9	420,000-500,000	500-600	5.0 × 10 ⁻⁵ -6.1 × 10 ⁻⁵	Not Rated	0.5-0.6
Oil-Filled Cast Nylon 6	0.0412-0.0416	9,500-11,800	0.12-0.15	1.2-1.8	375,000-475,000	500-600	5.0 × 10 ⁻⁵ -5.5 × 10 ⁻⁵	Not Rated	0.063-2
MDS-Filled Cast Nylon 6	0.0415-0.0422	10,000-13,500	0.22	0.7-0.9	420,000-500,000	500-600	5.0 × 10 ⁻⁵	Not Rated	0.5-0.6
Delrin® Acetal Resin	0.051	9,600-11,000	0.2-0.4	1-2.4	380,000-470,000	439-500	4.7 × 10 ⁻⁵ -6.8 × 10 ⁻⁵	2.08-2.6	0.2-0.4
Turcite	0.053-0.054	5,900-7,600	0.22-0.30	0.54-0.57	335,000-350,000	Not Rated	5.2 × 10 ⁻⁵	Not Rated	0.2
Glass-Filled Delrin® Acetal Resin	0.056	8,500	0.35	0.8	730,000	490	3.3 × 10 ⁻⁵	Not Rated	0.25
PTFE-Filled Delrin® Acetal Resin	0.054-0.056	6,800-12,490	0.07-0.14	0.7-1.2	350,000-420,000	400	5.1 × 10 ⁻⁵ -6.8 × 10 ⁻⁵	Not Rated	0.2-0.25
Acetal Copolymer	0.048-0.051	6,400-9,500	0.11-0.35	1-1.8	210,000-400,000	420-500	5.4 × 10 ⁻⁵ -12 × 10 ⁻⁵	1.6-2.15	0.2-0.8
Polyester (PET and Hydex)	0.036-0.058	Film 25,000-34,000; Sheets/Rods 11,500	Film Not Rated; Sheets/Rods 0.19-0.25	Film Not Rated; Sheets/Rods 0.6	Film 710,000; Sheets/Rods 430,000	Film 7,000; Sheets/Rods 400	Film 1.7 × 10 ⁻⁵ ; Sheets/Rods 3.9 × 10 ⁻⁵	Film Not Rated; Sheets/Rods 2.01	Clear Film Not Rated; White Film, Sheets/Rods 0.1-0.8

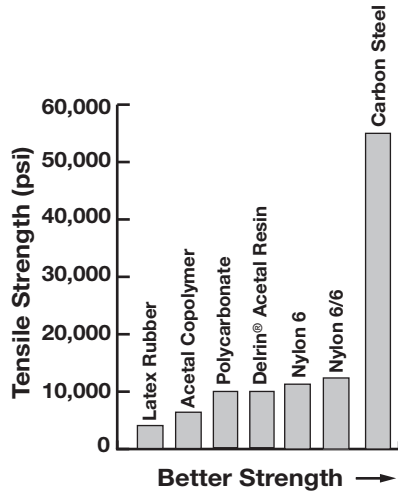
■ 1 mil = 0.001"

This data is intended only as a basis for comparison. It is given without obligation or liability. No warranty of fitness for a particular purpose or application is made.

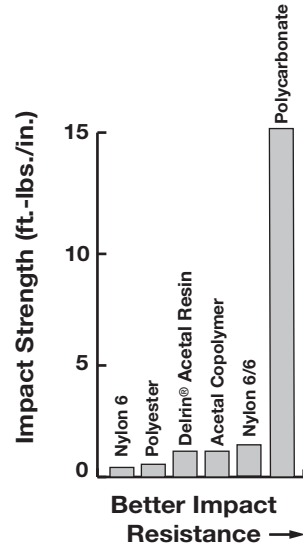
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The following graphs are provided for comparative purposes only.

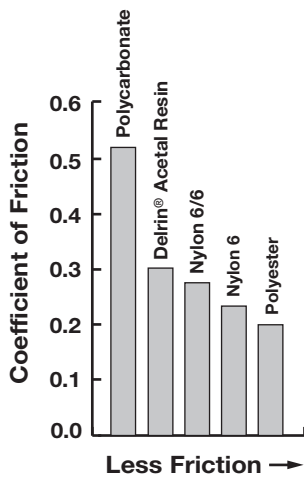
Tensile Strength



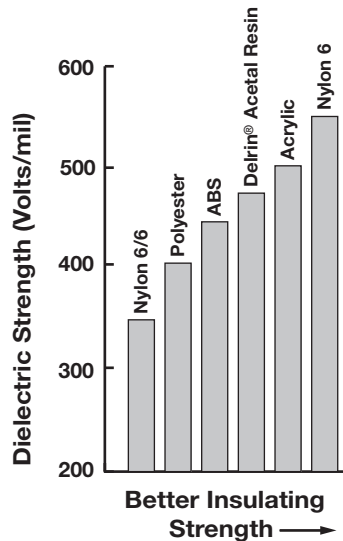
Impact Strength



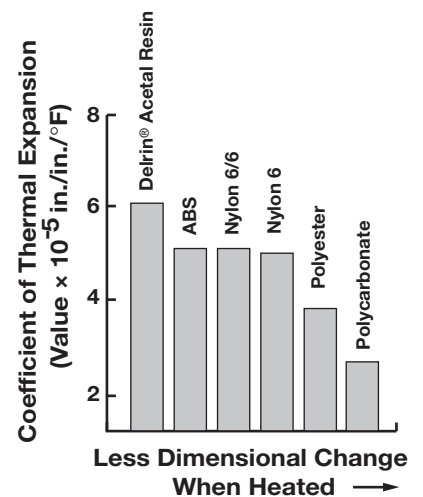
Coefficient of Friction



Short-Term Dielectric Strength



Coefficient of Thermal Expansion



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