

TYPICAL PROPERTIES OF THERMOPLASTIC POLYESTERS

ASTM or UL Test	Property	Unreinforced Resin	20 to 30% Glass Reinforced
PHYSICAL			
D792	Specific gravity	1.31-1.43	1.49-1.56
D792	Specific volume (in ³ /lb)	21.1-19.4	17.1-16.4
D570	Water absorption , 24 h, 1/8-in thk (%)	0.07-0.09	0.07
MECHANICAL			
D638	Tensile strength (psi)	12,400	16,500-23,000
D638	Elongation (%)	5-300	1-3
D638	Tensile modulus (10 ⁵ psi)	4.6	12-17
D790	Flexural strength (psi)	12,000-18,000	24,000-33,000
D790	Flexural modulus (10 ⁵ psi)	2.8-4.9	11-14
D256	Impact strength , Izod (ft-lb/in of notch)	0.5	1.0-2.6
D671	Fatigue endurance limit , 10 ⁷ cycles (psi)	2,850-3,500	4,000-5,000
D785	Hardness , Rockwell M	65-93	90-100
THERMAL			
C177	Thermal conductivity (Btu-in/hr-ft ² -°F)	1.1-2.0	1.3-9.0
D696	Coefficient of thermal expansion (10 ⁻⁵ in/in-°F)	3.3-8	1.3-5.4
D648	Deflection temperature (°F)		
	At 264 psi	122-240	395-435
	At 66 psi	302-354	435-475
UL 94	Flammability rating	HB to V-O	HB to V-O and 5 V
ELECTRICAL			
D149	Dielectric strength (V/mil)		
	Short time, 1/8-in thk	385-4	480-560
D150	Dielectric constant		
	At 1 kHz	3.2-3.4	3.6-3.7
D150	Dissipation factor		
	At 1 kHz		0.002-0.003
D257	Volume resistivity (ohm-cm)		
	At 73°F, 50% RH		5-10x10 ¹⁵
D495	Arc resistance (s)		80-130
FRICTIONAL			
—	Coefficient of friction		
	Self	0.12-0.20	0.12-0.22
	Against steel	0.10-0.23	0.12-0.13

Ref: Machine Design – 1985