

TECHNICAL DATA SHEET

Micarta

Phenolics or micarta are laminated plastics created by the impregnation of layers of a substrate with a resin then formed utilizing heat and pressure. The resins are generally Phenolic, silicone, melamine or epoxies while the substrate materials range from paper and cotton to glass. The resulting material is extremely versatile and used in a variety of applications. The notable properties of laminates include impressive resistance to shock, heat, stress, and corrosive chemicals. Phenolics are able to be machined, drilled, punched, sanded, tapped, turned, milled, sheared and cut. The dielectric properties make this an excellent insulator which is used in applications from electrical transformers to circuit boards.

TYPICAL PROPERTIES of PHENOLIC LAMINATES (SHEET FORM)

(mechanical properties of rod and tube forms may differ)

ASTM or UL test	Property	Paper	Canvas	Linen
PHYSICAL				
D792	Density (lb/in ³) (g/cm ³)	0.049 1.35	0.050 1.37	0.048 1.34
D570	Water Absorption, 24 hrs (%)	2.0	2.5	1.8
MECHANICAL				
D638	Tensile Strength (psi) -lengthwise -crosswise	15,000 12,000	11,000 9,000	13,000 9,000
D790	Flexural Strength (psi)-lengthwise -crosswise	16,000 13,200	17,500 15,000	22,000 16,000
D790	Flexural Modulus (psi)-lengthwise -crosswise	1,100,000 900,000	1,600,000 1,500,000	1,600,000 1,200,000
D256	IZOD Notched Impact (ft-lb/in)-lengthwise -crosswise	0.65 0.60	1.70 1.50	1.35 1.10
D695	Compressive Strength (psi)	32,000	37,000	37,000
D785	Hardness, Rockwell M	M100	M100	M100
THERMAL				
D696	Coefficient of Linear Thermal Expansion (x 10 ⁻⁵ in./in./°F) -lengthwise -crosswise	0.80 1.20	1.10 1.22	1.00 1.06
-	Max Operating Temp (°F / °C)	257 / 125	257 / 125	285 / 140
C177	Thermal Conductivity (BTU-in/ft ² -hr-°F) (x 10 ⁻⁴ cal/cm-sec-°C)	2.03 7.0	2.03 7.0	2.03 7.0
UL94	Flammability Rating	H-B	H-B	H-B
ELECTRICAL				
D149	Dielectric Strength (V/mil) short time, 1/8" thick	750(XX)	550(CE)	625(LE)
D150	Dielectric Constant at 1 MHz	5	5	6
D150	Dissipation Factor at 1 MHz	0.045	-	0.045
D495	Arc Resistance (sec)	110	15	15

Benefits

Resistance to shock
Heat stress resistance
Stands up to corrosive chemicals
Good electrical properties

Applications

Aerospace
Automotive
Electronic
Electrical insulation
Counter and tabletops
Decorative applications

AVAILABLE



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.