



PRODUCT CAPABILITIES:

- STOCK SHAPES
· Sheet : 0.2mm - 50mm

PRODUCT COLORS:

- Light Green

ADVANTAGES:

- Non-Brominated Epoxy Resin For G-10
- FR-4 Contains Bromine On Epoxy Resin Backbone
- Easy Machinability
- G-10 Meets Requirement of MIL-I-24768/2
- FR-4 Is Flame Retardant

APPLICATIONS INCLUDE:

- Low Temperature Thermal Insulation
- Structural Applications
- Mechanical & Electrical Applications At Low To Moderately High Temperatures.
- Pipe Shoes And Vacuum Applications

NORPLEX-MICARTA

GENERAL PROPERTIES		ASTM or UL Test	G-10 Typical Values	FR-4 Typical Values
PHYSICAL				
Density (g/cm ³)		D792	1.77	1.85
Water Absorption, Immersion, 24 hr (%) (0.0625")		D570	0.22	0.10
MECHANICAL				
Tensile Strength (Mpa) (0.125")	LW / CW	D638	296.5 / 268.9	275.8 / 220.6
Flexural Strength (Mpa) (0.0625")	LW / CW	D790	455.1 / 413.7	448.2 / 358.5
Flexural Modulus (Gpa) (0.0625")	LW / CW	D790	23.4 / 22.8	20.0 / 17.9
Compressive Strength (Mpa) (0.5")	Flatwise	D695	433	455.1
Bonding Strength (Kg) (0.5")		D229	1,134.0	1,043.3
Shear Strength (Mpa) (0.0625")		D732	131.0	148.2
Izod Impact Strength (ft-lb/in) (0.5")	LW / CW	D256	9.50 / 7.50	7.90 / 7.30
Hardness, Rockwell, Scale M		D785	99	98
THERMAL				
Coeff. of Thermal Expansion (1"/°Cx10 ⁶) (0.125")		IPC-TM 650- 2.4.24	X-axis (12.1)	X-axis (10.0)
			Y-axis (9.6)	Y-axis (13.0)
Temperature Index (°C), Electrical (0.125")		UL Bulletin 746b	130	130
Temperature Index (°C), Mechanical (0.125")		UL Bulletin 746b	140	140
Tg by DMA (0.5")		–	120	130
Flammability Rating (0.0625")		UL-94	HB	V-0
ELECTRICAL				
Breakdown Voltage (kVolts) (0.0625")		D149	48	66
Electric Strength (kV/cm) (0.0625")		D149	271.7	248.0 / 263.8
Arc Resistance (sec)		D495	–	130
Comparative Tracking Index (volts)		D7638	–	600

NOTE: The information contained here in is typical values intended for reference only. They should NOT be used as a basis for design specifications or quality control.