



Glass-Based Phenolic Material Specifications

G-10's natural color is typically a yellowish to light green. Epoxy resins are among the most versatile and widely used plastics in the electronics field. G-10 has extremely high mechanical strength, good dielectric loss properties, and electrical strength, both wet and dry.

G-11 is known for its extremely high strength and high dimensional stability over temperature. G-11 is used for terminal boards, high humidity applications, electrical and electronic test equipment. G-10 is slightly stronger while G-11 is a better insulator and can withstand higher temperatures. Other Phenolic grades are available call or [email](mailto:tpi@technicalproductsinc.com) your request.

Physical Properties	Units	Test	G-10	G-11
Density	lb/in ³	D792	0.065	0.065
	g/cm ³		1.80	1.80
Water Absorption, 24 hrs.	%	D570	0.10	0.20

Mechanical Properties	Units	Test	G-10	G-11
Tensile Strength	psi	D638	lengthwise- 45,000 crosswise- 38,000	lengthwise- 43,000 crosswise- 37,000
Flexural Strength	psi	D790	lengthwise- 75,000 crosswise- 65,000	lengthwise- 80,000 crosswise- 70,000
Flexural Modulus	Kpsi	D790	lengthwise- 2,700 crosswise- 2,400	lengthwise- 3,000 crosswise- 2,700
Compressive Strength	psi	D695	65,000	63,000
Hardness Rockwell M	-	D785	M110	M112
Izod Impact Notched	ft-lb/in	D256	lengthwise- 14.0 crosswise- 12.0	lengthwise- 12.0 crosswise- 9.0

Thermal Properties	Units	Test	G-10	G-11
Coefficient of Linear Thermal Expansion	x 10 ⁻⁵ in./in./°F	D696	lengthwise- 0.55 crosswise- 0.66	lengthwise- 0.72 crosswise- 0.83
Max. Use Temperature	°F/°C	-	284/140	329/165
Thermal Conductivity	BTU-in/ft ² -hr-°F	C177	2.0	2.0
	x 10 ⁻⁴ cal/cm-sec-°C		7.0	7.0
Flammability Rating	-	UL94	H-B	H-B

Electrical Properties	Units	Test	G-10	G-11
Dielectric Strength	(V/mil) short time, 1/8" thick	D149	800	900
Dielectric Constant	@1 MHz	D150	5.0	4.5
Dissipation Factor	@1 MHz	D150	0.019	0.020
Arc Resistance	sec	D495	100	120

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