



ISO 9001 Registered Quality System.
Burlington, Ontario, Canada QMI File # 004008

Positive Presensitized Copper Clad Boards 600 Series Technical Data Sheet

600-Series

Description

The 600 Series *Positive Presensitized Copper Clad Boards* are made of a translucent laminate consisting of a continuous woven glass cloth impregnated with epoxy resin. The boards are made of FR4, which is a flame retardant version of G-10 material.

Applications & Usages

The boards are ideal for prototyping and small production runs. It is used by the circuit processing industries and students.

Benefits and Features

- **1 oz copper boards (1.37 mil, 35 µm)**
- **Flammability meets UL 94V-0 (file # E98983)**
- **High heat resistance**
- **UV blocking**
- **Comes in single-sided and double-sided boards of 1/16" (1.60 mm), 1/32" (0.80 mm), and 1/64" (0.40 mm) thicknesses**

Properties

<i>Physical Properties</i>	<i>Method</i>	<i>Specification</i>	<i>Typical Value</i>
Moisture Absorption Flammability	IPC-TM-650 2.6.2.1 UL-94	<0.35% Meets	0.05-0.3% 94V-0
<i>Mechanical Properties</i>	<i>Method</i>	<i>Specification</i>	<i>Typical Value</i>
Peel Strength, 1 oz	IPC-TM-650 2.4.8	>6 lb/in	10-14 lb/in
<i>Thermal Properties</i>	<i>Method</i>	<i>Specification</i>	<i>Typical Value</i>
Glass Transition Temperature (T _g)	IPC-TM-650 2.4.25	—	130-145 °C
CTE prior T _g , Z-axis	IPC-TM-650 2.4.24	—	50-70 ppm/°C
CTE after T _g , Z-axis	"	—	250-350 ppm/°C
Dimensional Stability, X-Y axis	IPC-TM-650 2.4.39	<0.05%	0.005-0.03%
Thermal Stress	IPC-TM-650 2.4.13.1	>10 s	>200 s
Decomposition Temperature @5% weight loss	IPC-TM-650 2.4.24.6	—	310 °C



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<i>Electrical Properties</i>	<i>Method</i>	<i>Specification</i>	<i>Typical Value</i>
Dielectric Breakdown	IPC-TM-650 2.5.6	>40 kV	>60 kV
Volume Resistivity	IPC-TM-650 2.5.17	>10 ⁶	5 x 10 ⁸ to 5 x 10 ⁹ mΩ·cm
Surface Resistivity	"	>10 ⁴	5 x 10 ⁶ to 5 x 10 ⁷ mΩ·cm
Arc Resistance	IPC-TM-650 2.5.1	>60 s	>120 s
Dielectric Constant @1 MHz	IPC-TM-650 2.5.5.9	<5.4	4.2-4.7
@1 GHz	"	—	3.8-4.2
Dissipation Factor @1 MHz	"	<0.035	0.015-0.020
@1 GHz	"	—	0.012-0.014

Note: Typical values for reference only. Values tested with 0.020-0.062" sample.

Storage and Shelf Life

Store at around room temperature 18 to 27 °C [65 to 80 °F] and protect from direct heat or sunlight. Keep sealed in an air tight container, away from humidity.

Health and Safety

Please see the *600 Series Positive Presensitized Copper Clad Boards Safety Data Sheet* (SDS) for more details on transportation, storage, handling and other security guidelines.

Environmental Impact: This product doesn't have any known environmental toxicity.



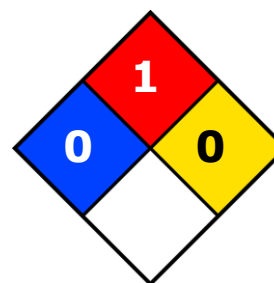
This product meets the European Directive 2011/65/EU Annex II (ROHS); recasting 2002/95/EC.

Health and Safety: This product is not considered to be hazardous for human health under normal use.

HMIS® RATING

HEALTH:	0
FLAMMABILITY:	1
PHYSICAL HAZARD:	0
PERSONAL PROTECTION:	

NFPA® 704 CODES



Approximate HMIS and NFPA Risk Ratings Legend:

0 (Low or none); 1 (Slight); 2 (Moderate); 3 (Serious); 4 (Severe)



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Packaging and Supporting Products

Available Sizes

FR4 1/16" (1.60 mm), single sided

<i>Cat. No.</i>	<i>Metric</i>	<i>Imperial</i> ^{a)}
603	75 x 125 mm	3" x 5"
606	100 x 150 mm	4" x 6"
609	150 x 150 mm	6" x 6"
612	150 x 228 mm	6" x 9"
630	200 x 300 mm	8" x 12"

FR4 1/16" (1.60 mm), double sided

<i>Cat. No.</i>	<i>Metric</i>	<i>Imperial</i> ^{a)}
650	150 x 150 mm	6" x 6"
660	152 x 230 mm	6" x 9"

FR4 1/32" (0.80 mm), single sided

<i>Cat. No.</i>	<i>Metric</i>	<i>Imperial</i> ^{a)}
687	100 x 150 mm	4" x 6"
689	150 x 230 mm	6" x 9"

FR4 1/32" (0.80 mm), double sided

<i>Cat. No.</i>	<i>Metric</i>	<i>Imperial</i> ^{a)}
690	150 x 230 mm	6" x 9"

FR4 1/64" (0.40 mm), double sided

<i>Cat. No.</i>	<i>Metric</i>	<i>Imperial</i> ^{a)}
698	150 x 230 mm	6" x 9"

a) Sizes are approximate

Supporting Products

- *Positive Presensitized Copper Clad Boards 600 Series*
- *Copper Clad boards (Half Ounce) 500 Series (Half Ounce)*

Technical Support

Contact us regarding any questions, improvement suggestions, or problems with this product. Application notes, instructions, and FAQs are located at www.mgchemicals.com.

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Warranty

M.G. Chemicals Ltd. warrants this product for 12 months from the date of purchase by the end user. *M.G. Chemicals Ltd.* makes no claims as to shelf life of this product for the warranty. The liability of *M.G. Chemicals Ltd.* whether based on its warranty, contracts, or otherwise shall in no case include incidental or consequential damage.

Disclaimer

This information is believed to be accurate. It is intended for professional end users having the skills to evaluate and use the data properly. *M.G. Chemicals Ltd.* does not guarantee the accuracy of the data and assumes no liability in connection with damages incurred while using it.