

## Chomerics THERMATTACH® T418 Extremely High Strength Heat Sink & Component Attachment Tape

**Product Description** – T418 is the latest offering in Chomerics’ line of industry-leading thermally conductive attachment tapes. Chomerics has utilized its world-class materials science expertise and decades of applications development experience to create this superior product, offering exceptional thermal and mechanical attachment properties.

### Typical T418 Material Properties

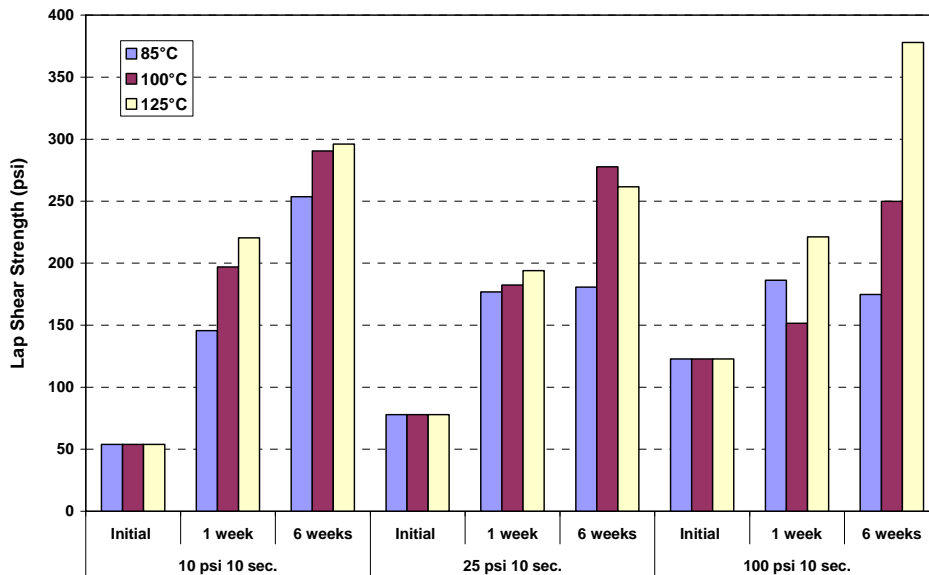
Properties	Metric Value	Imperial Value	Method
<b>Composition</b>	Ceramic-filled acrylic PSA with fiberglass carrier	Ceramic-filled acrylic PSA with fiberglass carrier	Visual
<b>Thickness</b> (mm) / (inch)	0.25 +/- 0.025	0.010 +/- 0.001	ASTM D374
<b>Thermal Impedance</b> (K-cm <sup>2</sup> /W) / (K-in <sup>2</sup> / W) Tested @ 50 psi	9.0	1.4	ASTM D5470
<b>Thermal Conductivity</b> (W/m-K)	0.5	0.5	ASTM D5470
<b>Voltage Breakdown</b> (Vac)	5,000	5,000	ASTM D149
<b>Dielectric Strength</b> (Vac/mm) / (Vac/mil)	15.2	600	ASTM D149
<b>Volume Resistivity</b> (Ohm-cm)	1.0 X 10 <sup>13</sup>	1.0 X 10 <sup>13</sup>	ASTM D257
<b>2 mil Al Foil Peel Strength</b> (N/cm) / (lbf/in) 90° on aluminum	8.1	4.6	ASTM D1000
90° on plastic (G10)	8.2	4.7	
<b>Lap Shear</b> (KPa) / (psi) 10 psi & 15 second attach, Al - Al. Peel dwell time <10 min.	862	125	ASTM D1002
<b>Die Shear Adhesion after 400 psi attachment</b> (KPa) / (psi) – 2 hour sample dwell time	1,669	242	Chomerics # 54
<b>Contact Area (%)</b> (Acrylic glass to Al, 10 psi attach for 15 seconds)	30+ %	30+ %	Chomerics
<b>Continuous Operating Temperature</b> °C (°F)	-40 to + 125	-40 to + 257	Supplier Certification
<b>Shelf-Life</b> months (from Chomerics date of shipment)	12	12	
<b>Flammability Rating</b>	UL94 V0	UL94 V0	UL94V0 against 0.062" Aluminum
<b>RoHS Information</b>	Compliant	Compliant	RoHS Specification. SGS Testing

Data contained in this data sheet represents typical properties and is not meant for specification purposes. It is the sole responsibility of the customer (user) to appropriately evaluate this product for use. Please contact Chomerics for official specifications for this product and for applications assistance.

**Reliability Testing**

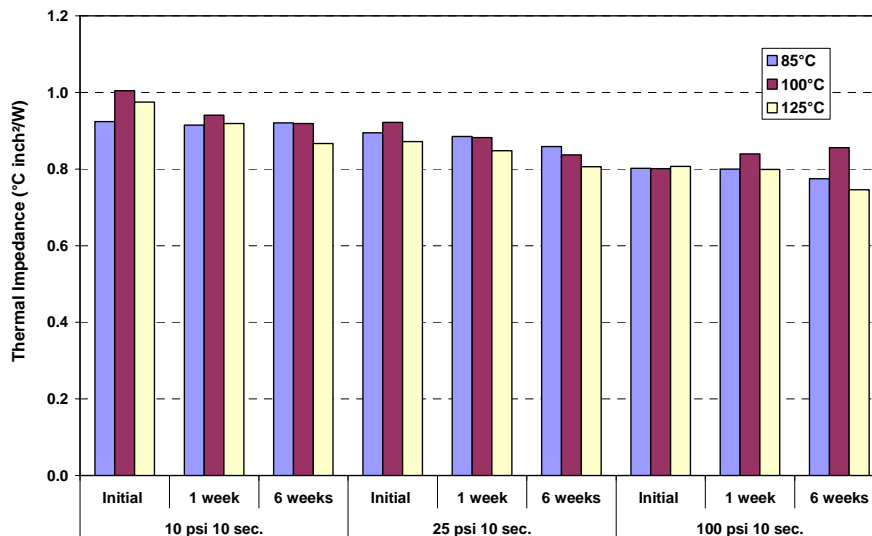
T418 has been tested after exposing to thermal aging (1000 hours at temperatures up to 125°C), Humidity aging (1000 hrs at 85°C/85% relative humidity), Thermal shock (-40 to 125°C, 10°C/min. for 100 cycles), Mechanical shock (60G's in 6 directions with half sine pulse), and Sine vibration (X&Y axis, 10-2000Hz with 2 grams to 12 grams). Lap shear samples were prepared by sandwiching T418 tape between Al substrates with 1x1 inch<sup>2</sup> overlap. Thermal samples for reliability testing were also prepared by laminating the tape between Al substrates at various pressures. It exhibits excellent stability, and passes thermal and mechanical properties after aging.

**Lap Shear Strength After Thermal Aging**



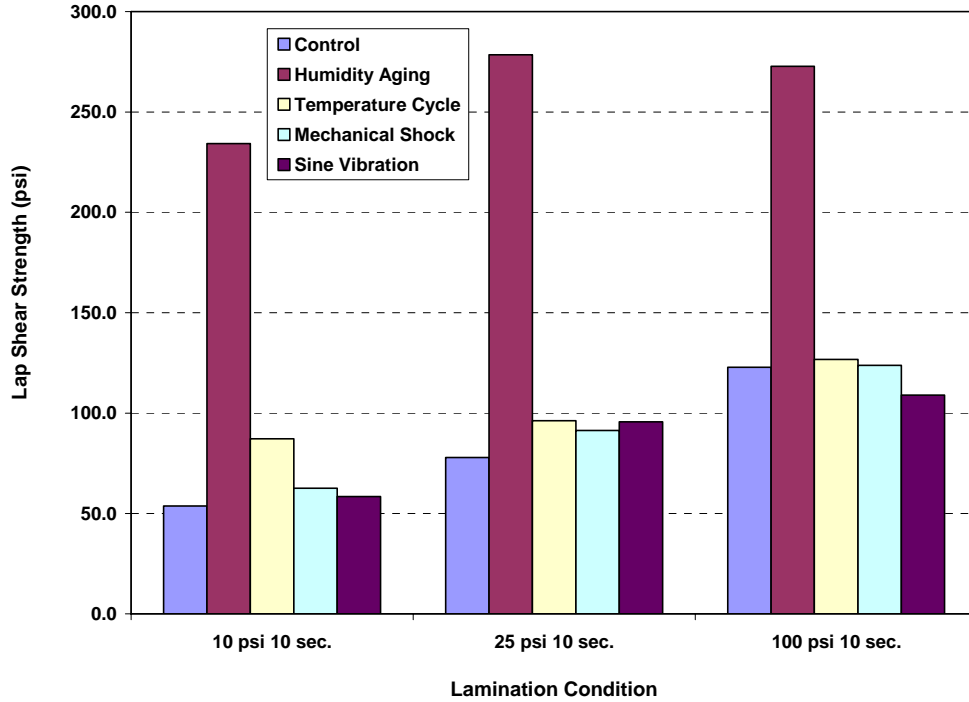
Aging Time at Temperature for Various Lamination Conditions

**Thermal Impedance After Thermal Aging**

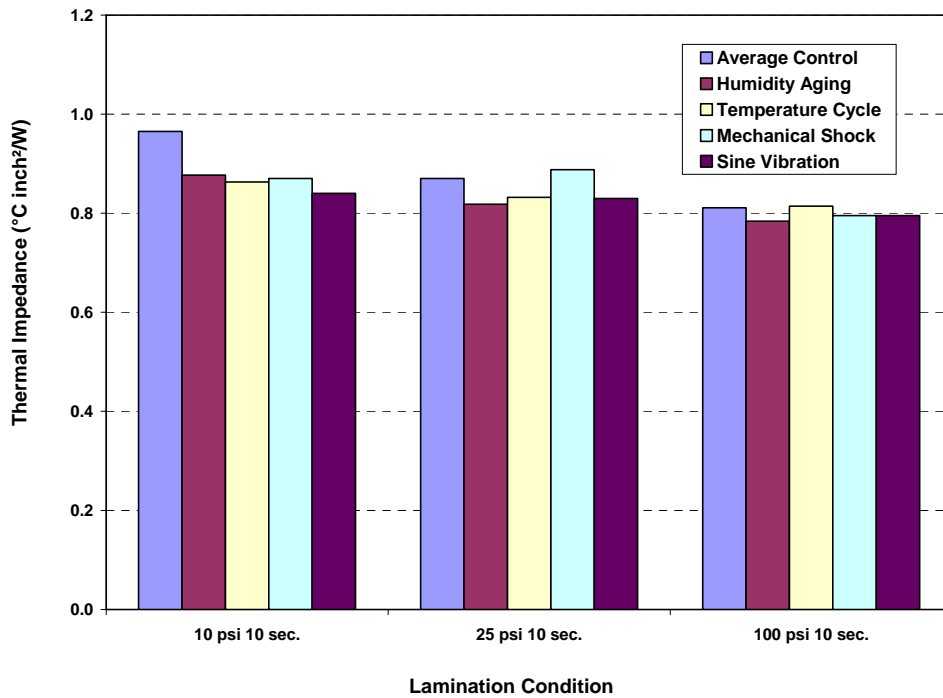


Aging Time at Temperature for Various Lamination Conditions

Lap Shear Strength After Different Reliability Stress



Thermal Impedance After Different Reliability Stress



**Hanging Shear Load Performance**

Hang shear at 2 temperatures. 1 square inch (25.4 mm <sup>2</sup> ) contact area. Tested for 1 week (10,080 minutes)							
Epoxy laminate		Ceramic (alumina)		Aluminum		Stainless Steel	
1,000 g weight	500 g weight	1,000 g weight	500 g weight	1,000 g weight	1,000 g weight	1,000 g weight	500 g weight
25°C	70°C	25°C	70°C	25°C	70°C	25°C	70°C
Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

**WARNING – USER RESPONSIBILITY**

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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