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**125-22**

**SCREEN-PRINTABLE, B-STAGEABLE, ELECTRICALLY CONDUCTIVE, LOW CTE, EPOXY ADHESIVE**

**DESCRIPTION**

125-22 is a screen-printable, B-Stageable, electrically conductive, one part epoxy adhesive, suitable for application by screen-printing and syringe dispensing. 125-22 is designed to exhibit minimal flow during bonding. This product provides superior electrical and thermal conductivity when bonding circuit materials to metal back planes and heat sinks. This product has excellent adhesion to copper, aluminum and ceramic and a variety of other substrates. Additional applications include, but are not limited to, assembling electrical and electronic components. This system features excellent thermal stability and flexibility in the B-Staged form.

**UNIQUE FEATURES**

- \* Minimal flow during cure
- \* B-Stageable
- \* Excellent Chemical Resistance
- \* Low CTE
- \* Long Screen Life
- \* Excellent High Temperature Performance

**TYPICAL UNCURED PROPERTIES**

Property	Value	Units
Viscosity – Brookfield HAT Viscometer, 10 rpm @ 25°C	20,000 – 30,000	cps
Specific Gravity (water = 1)	1.88	g/cc
Theoretical Coverage @ 0.001" Thickness <sup>1</sup>	~ 30	in <sup>2</sup>
Screen Life	> 8	hrs
Filler	Silver	-

<sup>1</sup> Dependent on screen mesh and material

**TYPICAL CURED PROPERTIES**

Property	Value	Units
Volume Resistivity, max	0.001	Ω - cm
Thermal Conductivity	6.5	W/mK
Percent Silver, cured	> 60	-
Thermal Stability	Good to 325	° C
Useful Temperature Range	-55 to 230	° C
Glass transition Temperature – Tg	150	° C
Coefficient of Thermal Expansion - Below Tg	50 x 10 <sup>-6</sup>	in/in/°C
- Above Tg	60 x 10 <sup>-6</sup>	in/in/°C
Tensile Shear Strength, min	2000	Psi
Peel Strength (Copper to copper @ 90°)	9	Pli

## **CURING GUIDELINES**

<u>Temperature (°C)</u>
160
175
200

<u>Time (min.)</u>
60
30
15

These temperatures and times are presented as a guide only. The end-user is encouraged to experiment to determine optimum curing schedule.

## **HANDLING AND STORAGE**

Material is ready to use as received. Store frozen to maintain consistent flow properties. Allow material to warm up to room temperature before opening container. It is important to resuspend any settled filler before using. Be careful not to entrap air while mixing. 125-22 can be thinned with small amounts of CMI# 113-12 (fast drying), or #102-03 (slow drying) thinners.

## **SHELF LIFE**

<b>Storage Temperature</b>	<b>Containers</b>	<b>B-Staged Film</b>
25°C	2 months	1 month
-10°C	6 months	3 months

## **B-STAGE PROCEDURE**

Apply adhesive to substrate or release liner. Next apply heat to advance the curing to the non-tacky stage when cooled to room temperature. A temperature of 100°C to 120°C for 5 to 15 minutes is required, B-Stage time is mass related. User is encouraged to experiment for optimum drying time at a given temperature.

## **BONDING PROCEDURE**

To use, apply b-staged adhesive to one part, carefully align parts to be bonded, apply uniform pressure to maintain location. Cure for 15 minutes at 200°C, or 30 minutes at 175°C, or 1 hour at 160°C. For better adhesion of the b-staged film to the first part, it is suggested to warm the part to 40°C. Cure times given are mass related, timing should start after adhesive and substrates reach curing temperature.

## **HEALTH AND SAFETY**

Use with adequate ventilation. Keep away from sparks and open flames. Avoid prolonged contact with skin and breathing of vapors. Wash with soap and water to remove from skin.

*All technical information is based on data obtained by CMI personnel and is believed to be reliable. No warranty is either expressed or implied with respect to results or possible infringements on patents.*

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