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125-22C119-44

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

DESCRIPTION

125-22C119-44 is a screen-printable, B-Stageable, electrically conductive, one-part epoxy adhesive, suitable for application by screen-printing and syringe dispensing. 125-22C119-44 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. 125-22C119-44 is 125-22 with 2% by weight B119-44 added for reduced cure times and temperatures.

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[1]	~ 30	in^2
Screen Life	> 8	hrs
Filler	Silver	-

1 Dependent on screen mesh and material

TYPICAL CURED PROPERTIES

Property	Value	Units
Volume Resistivity, max	0.001	Ω - cm
Thermal Conductivity	6.5	W/m-K
Percent Silver, cured	> 60	-
Thermal Stability	Good to +325	º C
Useful Temperature Range	-55 to +230	º C
Glass transition Temperature – Tg	150	º C
Coefficient of Thermal Expansion - Below Tg	50×10^{-6}	in/in/°C
- Above Tg	60×10^{-6}	in/in/°C
Tensile Shear Strength, min	2,000	Psi
Peel Strength (Copper to copper @ 90°)	9	Pli

CURING GUIDELINES

Temperature (ºC)	Time (min.)
100	60
125	30
150	15
175	5
200	3

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 entrap air while mixing. 125-22C119-44 can be thinned with small amounts of CMI 113-12 (fast drying), or 102-03 (slow drying) thinners.

SHELF LIFE

Storage Temperature	Containers	B-Staged Film
25°C	≤ 7 days	≤ 10 days
-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 70 – 85°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. For increased surface adhesion to some substrates CMI 126-39 can be used.

BONDING PROCEDURE

To use, apply B-staged adhesive to one part, carefully align parts to be bonded, apply uniform pressure to maintain location. Cure at one of the above cure schedules. 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.