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122-07 (SP) HIGHLY THERMALLY CONDUCTIVE, EPOXY DIE ATTACH ADHESIVE

DESCRIPTION

122-07SP is a screen-printable, B-Stageable, highly thermally conductive, one part epoxy coating and adhesive. This system features excellent thermal stability, outstanding chemical resistance and excellent high temperature properties. Applications include die attach adhesives, printed circuit board fabrication, advanced material composites, sealing and high performance coatings.

UNIQUE FEATURES

- * Excellent Thermal Conductivity
- * Outstanding Printability
- * B-Stageable
- * Long Screen Life
- * Excellent Chemical Resistance
- * Excellent High Temperature Performance
- * Low Ionics

IONIC CONTENT

Chloride	<10ppm	
Sodium	<10ppm	
Potassium	<10ppm	
(Typical properties are not intended to be used as specification limits)		

TYPICAL UNCURED PROPERTIES

Property	Value	Units
Viscosity – Brookfield HAT Viscometer @ 10 rpm @ 25°C	23,000	cps
Specific Gravity	1.85	water = 1
Theoretical Coverage @ 0.001" Thickness ¹	30	in ²
Screen Life	8	hrs
Solids	87	%
Color	Putty	N/A

¹ Dependent on screen mesh and material

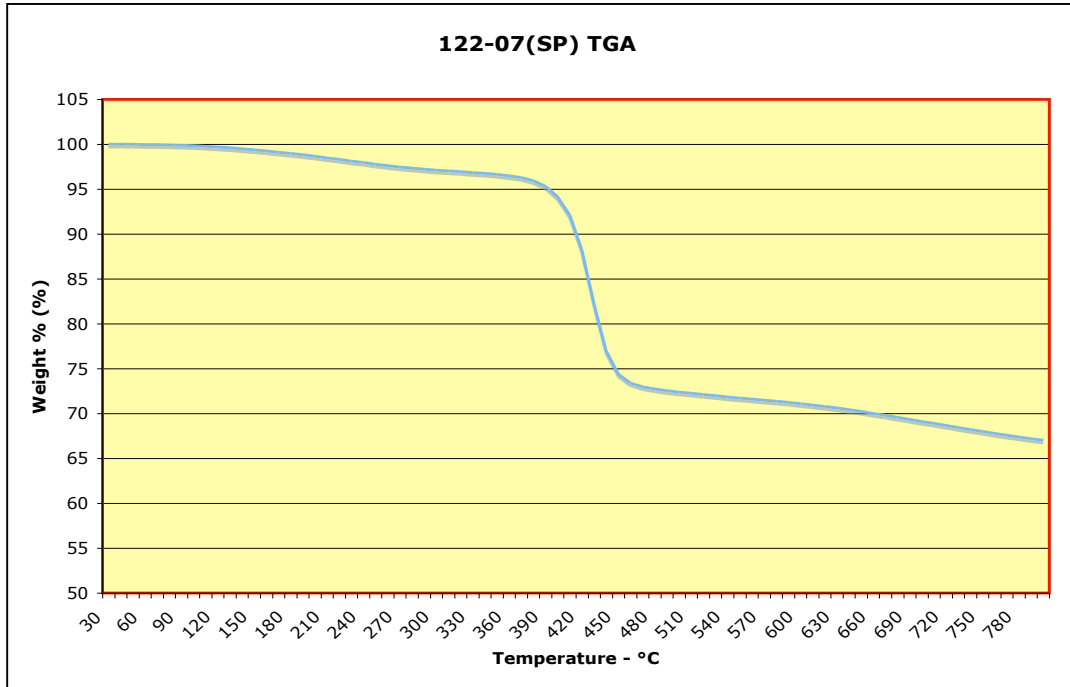
TYPICAL CURED PROPERTIES

Property	Value	Units
Thermal Conductivity	5.5	W/mK
Dielectric Strength	440	volts/mil
Volume Resistivity	1×10^{16}	ohms - cm
Dielectric Constant	5.2	1 Hz
Dielectric Factor	0.018	60 Hz
Thermal Stability	Good to 325	° C
Useful Temperature Range	-55 to 230	° C
Glass transition Temperature – Tg	100	° C
Coefficient of Thermal Expansion - Below Tg	29.5×10^{-6}	in/in/°C
- Above Tg	13.5×10^{-5}	in/in/°C

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.

TYPICAL CURED PROPERTIES

Property		Value	Units
Dynamic Tensile Modulus	-65°C	8780	Mpa
	25°C	6710	Mpa
	150°C	182	Mpa
	200°C	152	Mpa
T-Shear Strength		1800	Psi
Weight Loss @ 300°C, TGA		2.98	%
Differential Scanning Calorimetry (DSC)	Peak Tc	184	°C
	Δ Hc	-28.7	J/g



CURING GUIDELINES

Temperature (°C)	Time (min.)	
150	60	These temperatures and times are presented as a guide only. The end-user is encouraged to experiment to determine optimum curing schedule.
175	30	
200	15	

HANDLING AND STORAGE

122-07(SP) is a one component epoxy system and is ready to use as received. Product should be stored frozen to maintain consistent flow properties. **Allow 122-07(SP) to warm up to room temperature before opening container.** Prior to using, mix thoroughly to re-suspend fillers. If needed, 122-07(SP) can be thinned with small amounts of Creative Materials' 113-12 thinner.

SHELF LIFE

Storage Temperature	Containers	B-Staged Film
25°C	2 months	1 month
-10°C	6 months	6 months

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B-STAGE PROCEDURE

Apply adhesive to substrate. Apply heat to advance curing to the non-tacky stage (when cooled to room temperature). A temperature of 125°C for 2 – 3 minutes is required (B-stage time is mass related). The user is encouraged to experiment for optimum drying time at a given temperature. Store on release liner to prevent contamination.

BONDING PROCEDURE

To use, carefully align parts to be bonded, apply uniform pressure to maintain location. Follow curing guidelines given above. Timing should start once adhesive and substrate 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.

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REVISION DATE: 3/9/07 REVISION: C