TECHNICAL DATA SHEET

TDS# 1386

DATE: JUNE 2013

BACON INDUSTRIES

MICROCIRCUIT GRADE POTTING COMPOUND P-86

Potting Compound P-86 is a highly filled heat-curing system designed for use in electronic and microcircuit packaging. It is exceptionally fluid, can be handled easily at room temperature, cures in a relatively short time and has excellent electrical properties at high temperatures.

Because Potting Compound P-86 uses a liquid anhydride curing agent, it usually can be used over semiconductor junctions without causing poisoning failure. The costly step of protecting chips with silicone rubber barrier coatings can be eliminated in many applications.

RECOMMENDED MIXING AND HANDLING PARAMETERS

Resin	C-85
Activator	BA-62
Parts by weight of activator required per hundred of adhesive	27.0
Viscosity of Activated Compound, poise	
at 75°F	40.0
at 180°F	3.0
Working Life, hours	
at 75°F	>16
at 180°F	1
Work Life at 180°F, minutes	80
Pot Life (tack-free time) at 180°F, minutes	100
Recommended Cure, hr/°F	4/180
Alternate Cure, hr/°F	2/185 + 3/300

TYPICAL PROPERTIES OF CURED ADHESIVE:

Color	Black
Specific Gravity	1.72
Hardness, Shore D	90
Linear Shrinkage upon cure[1], %	0.16
Flexural Strength[2], psi	12100
Flexural Modulus[2], 10^6 psi	1.6
Water Absorption (24 hours at 77°F), %	0.02
Heat Distortion Temperature[3] (264 psi), °F	185
Glass Transition temperature[3] (Tg) by DSC, °F	165
Coefficient of Thermal Expansion, 10^{-6}/°F	
between -65°F and 80°F	18
between 80°F and 200°F	22

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Machinability	Fair
Dielectric Constant at 1 kHz	
at 77°F	3.91
at 212°F	3.77
Dissipation Factor at 1 kHz	
at 77°F	0.0033
at 212°F	0.0033
Volume Resistivity at 77°F, 10^{15} ohm-cm	
at 77°F	$2x10^{16}$
at 212°F	$4x10^{15}$

NOTES:

1. This is the apparent shrinkage when casting the potting compound in a steel mold at 180°F and includes the difference in coefficient of expansion between the potting compound and the steel. All measurements are made at room temperature.
2. After the recommended alternate cure, the flexural strength is 11700 psi and the flexural modulus is 1.1 x 10^{6} psi.
3. After the alternate cure, the Heat Distortion Temperature is 236°F and the Glass Transition Temperature by DSC is 214°F.

INSTRUCTIONS FOR USE:

Loosen the compound container cover and mix the contents thoroughly each time before removing material. For ease in mixing and when the potting compound will be used at elevated temperatures, the container may be heated in an oven operating at 180°-200°F. Occasionally, crystals will form in Activator BA-62 if it is exposed to temperatures below 60°F. When this occurs, heat to 160°F and mix thoroughly before removing material from the container. A potting temperature of 180°F provides reasonable work life along with a high degree of fluidity. To each 100 parts by weight of Compound 85 warmed to the potting temperature, add 27.0 parts by weight of Activator BA-62. Mix the activated compound well, preferably using a mechanical stirrer. Vacuum degas for five minutes to remove dissolved and entrapped air. Proceed with the casting operation and cure as indicated.

FOR INDUSTRIAL USE ONLY! WARNING!!

May cause injury to skin following prolonged or repeated contact. Keep container tightly closed when not in use. Use with adequate ventilation and avoid breathing vapor. In case of contact with skin or clothing, flush immediately with plenty of water. SPI Classification 2.

SHELF LIFE:

The shelf life of these materials is greater than two years when stored in unopened containers at an average temperature below 85°F.

AVAILABILITY:

Compound 85 is available in quart and gallon paint cans containing 3 lb and 14 lb net, respectively, as well as in 6-gallon open head pails containing 70 lb net. Activator BA-62 is available in 4 oz, pint, and gallon cans as well as 5-gallon pails. Prices are given on Data Sheets 1201 and 1211.