



MICROCIRCUIT GRADE POTTING COMPOUND CPE-1512

Potting Compound CPE-1512 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 CPE-1512 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. CASS Adhesives' CPE-1512 is identical to Bacon Industries' Potting Compound 86 in chemical composition. Bacon Industries' Potting Compound 86 has been labeled, packaged, tested and certified for aerospace applications. CASS Adhesives CPE-1512 is an industrial grade adhesive, however it may be used for aerospace applications if proper certifications have been issued and the material meets all of the manufacturer's specification requirements.

RECOMMENDED MIXING AND HANDLING PARAMETERS

Resin	CPE-1512
Activator	CPA-129
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
Work Life, hours	
at 75°F	>16
at 180°F	1
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, %	0.16
Flexural Strength, psi	12100
Flexural Modulus, 10 ⁶ psi	1.6
Water Absorption (24 hours at 77°F), %	0.02
Heat Distortion Temperature (264 psi), °F	185
Glass Transition temperature (T _g) by DSC, °F	165

(over)

Coefficient of Thermal Expansion, $10^{-6}/^{\circ}\text{F}$	
between -65°F and 80°F	18
between 80°F and 200°F	22
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	2×10^{16}
at 212°F	4×10^{15}

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°F - 200°F . Occasionally, crystals will form in Activator CPA-129 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 CPE-1512 warmed to the potting temperature, add 27.0 parts by weight of Activator CPA-129. 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!

These materials, including vapors, may cause injury to the skin following prolonged or repeated contact. Use with adequate ventilation. For health and safety information, refer to the Material Safety Data Sheets for these materials.

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:

CPE-1512 and CPA-129 are available in bulk kits as well as premixed and frozen in Freeze-Paks.