# TECHNICAL DATA SHEET

TDS# 1403

DATE: JUNE 2013

BACON INDUSTRIES

## LOW VISCOSITY, LOW TEMPERATURE CASTING SYSTEM P-103

Potting Compound P-103 is a filled undiluted epoxy system with good resistance to impact and will cure at moderate temperatures.

This system is recommended for potting devices such as connector shells from which wires may protrude directly through the epoxy. It adheres well to insulated wires.

This system is available in a number of colors besides black (see Note 1).

## RECOMMENDED MIXING AND HANDLING PARAMETERS

| | |
|---|---|
| Resin | C-103 |
| Activator | BA-99 |
| Parts by weight of activator required per hundred of adhesive | 15.0 |
| Viscosity of Activated Compound at 77°F, cp | 10000 |
| Extrusion rate through a 21 gauge x 0.5 in long needle at 60 psi, g/min | 0.7 |
| Work Life at 77°F (100 g), minutes | 185 |
| Tack-free time at 77°F (100 g), minutes | 195 |

## TYPICAL PROPERTIES OF CURED ADHESIVE:

| Cure | 7 days/80°F | 2 hr/140°F |
|---|---|---|
| Color | Black (1) | Black (1) |
| Hardness, Shore D | 86 | 90 |
| Flexural Strength, psi | 16000 | 17000 |
| Flexural Modulus, $10^6$ psi | 1.07 | 0.94 |
| Tensile Strength, psi | --- | 8000 |
| Linear Shrinkage upon cure, % | 0.0 | 0.3 |
| Density, g/cm$^3$ | 1.55 | 1.55 |
| Lap Shear Strength to aluminum, psi | | |
| at -40°F | 3000 | 2500 |
| at 77°F | 1900 | 3300 |
| at 160°F | 500 | 900 |
| Izod impact strength, ft-lb/in of notch | --- | 0.44 (est) |
| Glass Transition temperature, °F | | |
| by DSC | --- | 124 (2) |
| by TMA | --- | 122 |

(over)

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| Cure | 7 days/80°F | 2 hr/140°F |
|---|---|---|
| Coefficient of Thermal Expansion, $10^{-6}$/°F | | |
| between -65°F and 77°F | --- | 27 |
| between 77°F and 160°F | --- | 50 |
| Dielectric Constant at 1 kHz | | |
| at 77°F | --- | 5.01 |
| at 180°F | --- | 6.46 |
| Dissipation Factor at 1 kHz | | |
| at 77°F | --- | 0.007 |
| at 180°F | --- | 0.059 |
| Volume Resistivity at 77°F, $10^{15}$ ohm-cm | | |
| at 77°F | --- | $6x10^{15}$ |
| at 180°F | --- | $4x10^{11}$ |
| Moisture Absorption (24 hr immersion at 77°F) | 0.50 | 0.31 |
| Solvent Resistance, wt gain | | |
| Acetone | 1.80 | 1.81 |
| R-113 (3) | 0.02 | 0.00 |
| Hexane | 0.02 | 0.00 |
| Methylene Chloride | destroyed | destroyed |
| Toluene | 0.20 | 0.20 |

NOTES

1. This system is available in other colors as listed below. The directions for use are the same and the cured properties are essentially the same.

| | | | |
|---|---|---|---|
| Green | Compound 104 | Yellow | Compound 107 |
| Orange | Compound 105 | Blue | Compound 108 |
| Red | Compound 106 | Natural (grey) | Compound 109 |

2. After a post cure of 4 hours at 212°F, the Glass Transition Temperature by DSC is 152°F.
3. 1,1,2-trichloro-1,2,2-trifluoroethane.

**INSTRUCTIONS FOR USE:**

Mix contents thoroughly each time before removing material. Place 100 parts by weight of Compound 103 into a glass or metal container. Add 15 parts by weight of Activator BA-99 and mix well with a mechanical stirrer for five minutes. Vacuum degas if required and apply. 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. Activator BA-99 is a caustic amine which can cause eye injury and skin burns. In case of contact, flush immediately with plenty of water. For eyes, seek medical attention at once.

**SHELF LIFE:**

The Shelf Life of these materials is greater than one year when stored in unopened containers at an average temperature below 85°F.

**AVAILABILITY:**

This material is available in quart and gallon kits as well as premixed and frozen in FREEZE-PAKS, see Data Sheet 2031.