

**TECHNICAL PRODUCT BULLETIN**

**GENERAL DESCRIPTION**

E10-103 is an epoxy adhesive and coating formulation based on Nickel. This versatile nickel formulation offers the maximum continuity of conductivity with an electrical resistivity value of less than  $3.8 \times 10^{-2}$  ohm-cm. E10-103 is also characterized by a wide operating temperature range from -50 to +170°C.

E10-103 is recommended for electronic bonding and sealing applications that require both fine electrical and mechanical properties.

E10-103 cures at room temperature or can be accelerated with mild heat to form a tenacious bond between similar and dissimilar substrates including: aluminum, copper, magnesium, steel, bronze, nickel, ceramic, glass, phenolic and G-10 epoxy glass boards.

E10-103 has been used extensively in such diversified applications as microwave EMI & RFI shielding, in the assembly or repair of printed circuit boards, wave guides, electronic modules, flat cable, high frequency shields, connections, circuitry and as a cold solder for high-sensitive components where hot-soldering is impractical.

This unique formulation offers ease in handling due to its creamy consistency.

**Application:**

1. Clean and remove any dirt and grease from surfaces to be bonded.
2. Mix thoroughly, by weight, 5 parts E10-103 catalyst to 100 parts E10-103 Nickel resin.
3. Apply and cure overnight at room temperature or cure 2-3 hours at 80°C.

**SPECIFICATIONS**

**HANDLING CHARACTERISTICS:**

Catalyst Number:	Catalyst 103
Mix Ratio, Catalyst to Resin, by Weight:	1:20
Workable Pot Life, 100 g @ 25°C:	1 hr.
Mixed Viscosity @ 25°C cps:	paste
Color:	Grey
Cure Schedule:	24 hrs. @ Room Temp
	45 mins @ 50°C
	15 mins @ 100°C

**PHYSICAL CHARACTERISTICS**

Shrinkage Linear, in / in:	0.003
Hardness, Shore D:	85
Specific Gravity, 25°C / 25°C:	2.80
Tensile Strength, psi:	9,500
Compressive Strength, psi:	14,000

**THERMAL CHARACTERISTICS**

Thermal Conductivity, but / hr / ft <sup>2</sup> / °F / in:	100
Thermal Expansion Coefficient, (cm / cm / °C · 10 <sup>-5</sup> ):	1.5
Heat Distortions, °C:	95
Operating Temperature Range, °C:	-50 to +170

**ELECTRICAL CHARACTERISTICS**

Volume Resistivity, ohm · cm:	< $3.8 \times 10^{-2}$
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**AVAILABILITY and PACKAGING**

ALFA E10-103 is available for immediate delivery from stock in:

- \* 2.5, 5, 10 & 20 gram sizes.
- \* Jars Kits: (0.5 Lb, 1.0 Lb, 2.0 Lb)
- \* Customs sizes are available upon request

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The information given and the recommendations made herein are based on our research and are believed to be accurate but no guarantee of their accuracy is made. In every case we urge and recommend that purchasers before using any product in full scale production make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purposes under their own operation conditions. No representative of ours has any authority to waive or change the foregoing provisions but, subject to such provisions, our engineers are available to assist purchasers in adapting our products to their needs and to the circumstances prevailing in their business. Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute a permission, inducement or recommendation to practice any invention governed by any patent, without the authority from the owner of this patent. We also expect purchasers to use our products in accordance with the guiding principles of the Chemical Manufacturers Association's Responsible Care® program.