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# TECHNICAL DATA SHEET

# EP-600 TWO PART CONDUCTIVE EPOXY

**EP-600** is designed for **component attachment, termination and other applications** in:

- **hybrid circuits**
- **membrane keypads**
- **other electromechanical assemblies**

## DESCRIPTION

- Thixotropic properties and non-stringing characteristics of EP-600 make it an ideal material for high-speed, dot dispense processes where low temperature curing is required. Combined with its low viscosity, these properties allow dot dispense processes to run up to 70% faster.
- Exhibits excellent adhesion to most metal and plastic substrates, excellent temperature resistance, toughness, and allows for differences in coefficients of thermal expansion between two bonded substrates.
- Lateral component push-off testing on print-treated mylar substrates show that EP-600 has 30 to 40% greater bond strength than other conductive epoxy adhesives.
- Convenient mix ratios and packaging in pre-weighed amounts allow for ease of use in fast paced production environments. EP-600 is available in dual, pre-weighed and sealed plastic pouches called CC-Paks, or in separate bulk jars.

Applied Ink Solutions can modify the cure speed, working time, or rheology of EP-600 to make it more compatible with your unique manufacturing process. EP-600 is compatible with all of our silver conductive inks, UV curable encapsulants, dielectrics and conformal coatings.

## *TYPICAL PROPERTIES*

| | | |
|---|---|---|
| Appearance | Part A | Thixotropic silver colored paste |
| | Part B | Straw colored liquid |
| Mix Ratio | | 100 parts A (by weight) to 10 parts B |
| Mixed Viscosity SC4-14 @Shear Rate 10 | | Range: 10,000 - 30,000 cps |
| Shelf Life (Unmixed) | | 6 months in unopened container |
| Pot Life (10 Grams, Room Temperature) | | > 4 hours |
| Thin Film Set Time (.001" @ 25°C) | | >12 hours |
| Total % NV Solids | | 100% |
| Hegman Gauge | | <50µ |
| Volume Resistivity (ref. ASTM D-257) | | <1.0 x $10^{-3}$ Ω-cm |
| Operating Temperature Range (Fully Cured) | | -55°C To +125°C continuous intermittent at higher temperatures |

# EP-600 TWO PART CONDUCTIVE EPOXY

**Curing Schedule (time @ temperature)**

| Temperature | 90% Cure | 100% Cure |
|---|---|---|
| 75°C | 40 minutes | 60 minutes |
| 100°C | 15 minutes | 25 minutes |
| 140°C | 5 minutes | 7 minutes |

At 90% cure, the assembly can generally be handled carefully without the danger of damaging the adhesive bond. Adhesive will continue to cure at room temperature after removal from the oven. Cure times above are intended as guidelines, and are dependent on the actual glue line being held at the given temperature. Curing at room temperature only is not recommended. Heat curing gives increased bond strength.

## Pot Life

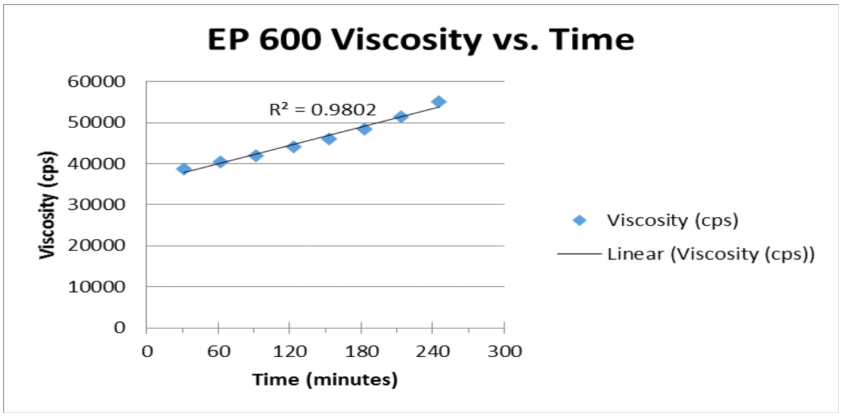


*Figure 1 Test Standard: Shear Rate 2; Temp 25C; Spindle SC4-14*

## Application Guidelines

Dot dispensing can be accomplished utilizing positive displacement or pneumatic actuated equipment. EP-600 exhibits quick break-off after dispensing, and will not cause shorts from stringing in high speed automated production processes. In small volume production environments, EP-600 can be mixed and manually loaded into syringes for dispensing with hand held equipment.

The rheological properties of EP-600 allow for accurate and repeatable dot geometries over a four hour window. While the viscosity of the mixed material will change over four hours, most dot dispense equipment can easily compensate for the rheological changes to accurately maintain dot configuration. Although it is not generally recommended, some customers are able to use EP-600 for six hours after mixing.

## Packaging

EP-600 is available in pre-weighed open jars (bulk kits) with a minimum order of 100 grams, or pre-weighed, two-part plastic pouches (CC-Paks). To use less than the full amount packaged in jars, a scale measuring out to three decimal points would be required to attain the proper mix ratio of Part A and Part B. CC-Paks are easiest to for mixing and the most popular packaging configuration. They are available in quantities of 5 grams or 10 grams of epoxy.

## Health & Safety

Products manufactured by Applied Ink Solutions are intended for use in an industrial environment by trained personnel. Please follow proper health/safety processes regarding storage, handling and processing of the products.

Guidelines are intended to provide a starting point for evaluation. Applied Ink Solutions recognizes that each customer's manufacturing process is unique, and we are available to provide technical assistance to resolve your processing issues. Call us to discuss your application in more detail.

The properties are accurate to the best of our knowledge and Applied Ink Solutions makes no guarantees for customer specifications established in applications where this product is used. Customer assumes responsibility for determining fitness of use in their particular application.