



TECHNICAL DATA SHEET

EP-1100 SINGLE COMPONENT SILVER CONDUCTIVE EPOXY

EP-1100 is a **one-part** adhesive epoxy designed for **screen or stencil printing** for **component attachment, termination and other applications** in:

- hybrid circuits
- membrane keypads
- other electromechanical assemblies

DESCRIPTION

- Rheology of EP-1100 makes it ideal material for screen or stencil printing.
- Exhibits excellent adhesion to most metal and plastic substrates
- Excellent temperature resistance and toughness
- Available in individual containers
- Compatible with all of our silver conductive inks, UV curable encapsulants, dielectrics and conformal coatings. Contact us for suitability of use with other materials.

For dot dispense processes, our EP-600 two component silver conductive epoxy is recommended.

TYPICAL PROPERTIES

Appearance	Thixotropic silver colored paste
Viscosity (Room Temperature)	TBD
Shelf Life (Ambient Temperature)	3 months in unopened container refrigerated @ 4°C or 7 days in unopened container at room temperature
Hegman Gauge	<50 μ
Volume Resistivity (ref. ASTM D-257)	<5.0 x 10 ⁻⁴ Ω-cm
Coefficient Of Thermal Expansion	
Below Tg	6.0 x 10 ⁻⁵ in/in/°C
Above Tg	1.5 x 10 ⁻⁴ in/in/°C
Thermal Conductivity	11 BTU in/ft ² hr. °F
Glass Transition Temperature (TMA)	110°C (fully cured)
Operating Temperature Range	-55°C to +175°C continuous, intermittent at higher temperatures when fully cured.

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Curing Schedule (time at temperature)	90% Cure	Complete Cure
120°C	5 minutes	15 minutes
140°C	3 minutes	5-7 minutes

At 90% cure, the assembly can generally be handled carefully without danger of damaging adhesive bond. EP-1100 will NOT continue to cure at room temperature once heat is removed. Cure times above are intended as guidelines, and are dependent on the actual glue line being held at the given temperature.

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.

Application Guidelines

In general, a more open screen with thicker emulsions, or a thicker stencil will give a larger pad of adhesive for bonding devices. However, thinner emulsions and stencils provide thinner pads that are less susceptible to wicking and shorting out during high temperature curing, especially with smaller surface mounted devices.

As EP-1100 is used in a stencil printing or screen printing process, the energy from the constant movement of the flood bar and squeegee will cause the material to thicken more quickly. Production runs of between 12 and 24 hours are possible with stable material rheology, dependent on ambient temperature, humidity and process parameters.

Screening

A monofilament polyester (157 to 200 mesh) or a stainless steel (165 to 270 mesh) screen is recommended, with emulsion thickness between .001" and .003". A polyurethane squeegee with a Shore 'A' durometer between 60 and 70 is recommended.

Stencil Printing

Can be accomplished using a wide range of stencil thicknesses (typically from .002" to .008"). A steel squeegee is recommended, with the squeegee placement at a slight angle from vertical. Stroke speed will be dependent upon size of stencil and placement of apertures, and it is recommended that printing be performed in both directions in order to transfer material automatically to both squeegees. Stencil printing should be done with a small offset (typically .040") in order to achieve clean patterns.

Shelf Life

EP-1100 has a shelf life is 3 months in unopened container refrigerated at 4°C or 7 days in unopened container at room temperature

Packaging

EP-1100 is available in pre-weighed open containers with a minimum purchase quantity of 100 grams.

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.