



TECHNICAL DATA SHEET

AGCL-823 SILVER/SILVER CHLORIDE EPOXY

DESCRIPTION

- Designed for biomedical applications where aggressive gel materials may slowly wick into traditional silver/silver chloride inks causing them to change electrical resistance over time
- Utilizes a crosslinked polymer binder system, providing excellent mechanical strength, toughness and high temperature and humidity resistance, while still maintaining excellent flexibility
- Exhibits excellent adhesion to most plastic substrates
- Designed to give a long working time on press, while curing quickly at lower temperatures
- Ships overnight on ice

AGCL-823 is compatible with all of our silver conductive inks, UV curable encapsulants, dielectrics and conformal coatings. Contact us for suitability of use with other materials.

AGCL-823 is designed for printing medical sensors such as EEG, EKG and defibrillator pads.

TYPICAL PROPERTIES

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| Appearance | Thixotropic silver colored paste |
| Viscosity - Brookfield DV-III SC4-14 25°C, Shear Rate of 10 | 5,500-8,500 cps |
| Shelf Life- Stored @ 4°C | 60 days in unopened container |
| Working Time (Room Temperature) | > 12 hours |
| Hegman Gauge | <100 μ |
| Volume Resistivity (ref. ASTM D-257) | <5.0 x 10 ⁻³ Ω-cm |
| Surface Resistivity | < 60mΩ/square /mil |
| 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 | 4 minutes | 10 minutes |

LIGHT SENSITIVE MATERIAL– DO NOT expose to light for long periods. DO NOT allow material to contact metals for long periods of time.

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

As AGCL-823 is used in a 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. In general a more open screen, with thicker emulsions, will give a thicker wet lay down. However, a thicker wet pattern will require more time for curing.

Screening

A monofilament polyester (180 to 280 mesh) with emulsion thickness between .001" and .003" is recommended. **Do not use stainless steel mesh or stencils with AGCL-823, as silver chloride will react with metals.** A polyurethane squeegee with a Shore 'A' durometer between 60 and 70 is recommended. Metal flood bars should be covered with a non-reactive coating or film such as a fluorocarbon film. Silicone materials should not be used as this can produce spot contamination in print patterns.

Shelf Life

While the viscosity of the mixed material will change slightly over the 60 day storage window, most application equipment can easily compensate for the rheological changes to accurately maintain print definition. AGCL-823 can be thinned using small amounts of DPMA solvent. Refreezing AGCL-823 after using it on a long production run is not recommended. If used material is reclaimed off of the screen, care should be taken to mix very small amounts of the reclaimed material back into fresh material just before printing.

Packaging

AGCL-823 is available in containers and plastic pouches. Contact Applied Ink Solutions for more information about plastic pouch packaging configurations.

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.