



TECHNICAL DATA SHEET

AG-594 FLEXO PRINTABLE SILVER CONDUCTIVE INK

DESCRIPTION

AG-594 is designed for high-speed gravure or flexo printing processes for:

- flex circuits
- RFID and cell phone antennas
- EEG/EKG/blood glucose disposable sensors
- other printed electronic applications

- Silver filled, electrically conductive, flexo printable ink
- Formulated to provide fast drying for increased line speeds
- Unique morphology of the silver filler used in AG-594 allows for extremely thin print patterns with excellent edge definition and optimized point to point conductivity on printed traces
- Tough, scuff resistant and has excellent adhesion to most metal surfaces as well as polyester, polyimide and polycarbonate films, with outstanding crease resistance when used on these substrates
- Can be thinned with solvent for spraying or dipping for EMI/RFI shielding applications
- Can be printed as thin base layers for plating processes

AG-594 is compatible with our UV curable dielectrics, silver chloride inks, conductive epoxy adhesives, UV curable component encapsulants and conformal coatings.

TYPICAL PROPERTIES

Appearance	Thick silver colored ink
Viscosity - Brookfield DV III SC4-14 @ shear rate of 20 @25°C	6,300 cps +/- 10%
Thixotropic Ratio	1.8
Drying Time	90 seconds to 4 minutes @ 130°C depending upon air flow and print thickness
Total % NV Solids	65% ± 2%
Hegman Gauge	<15.0 μ
Surface Resistivity	< .050 Ω/square/mil when fully dried
Theoretical Coverage (Dried Film)	41m ² /gallon/25μ (440 ft ² /gallon/mil)
Shelf Life	6 months in unopened container

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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

AG-594 will thicken when it is stored in sealed containers over a period of time. It is essential to mix the material thoroughly before use to re-disperse any settled silver particles and to return the ink to a more desirable viscosity.

Line Screen

As a starting point for printing, typical anilox rolls are 120 line 14 bcm quad ruled, 140 lined 12 bcm or up to 200 line 15 bcm rolls. Typical wet film thicknesses of 8 to 14 microns are possible with one pass. Dry film thicknesses as thin as 5 to 6 microns are possible. If thicker wet film and dry film transfers are required, try using textured or half toned flexo-graphic transfer plates.

Thinning & Cleanup

For thinning, use Solvent 20. For cleanup, use Solvent 10 or a suitable screen cleaner. If faster drying time is required, contact Applied Ink Solutions for solvent recommendations. If solvent based inks are left on screens for any length of time, the ink will gradually thicken as solvent evaporates. If ink is to be left on an inactive press for any length of time, solvent evaporation can be minimized by pooling the ink into a small area instead of leaving it spread out over a large area. Pooling the ink reduces the surface area, thus slowing the drying process. Always check the viscosity of ink that has been recovered from a screen and add small amounts of solvent while mixing thoroughly to restore viscosity. Solvent can be added to reclaim thickened ink as long as the ink has not dried and hardened completely.

Drying

It is essential that all residual solvent be removed from this ink once it is applied. Incomplete drying will cause the ink to appear dry on the surface while trapping solvent underneath the surface. Over time, this trapped solvent will migrate out of the ink, and can cause adhesion problems with any material, such as dielectrics, applied over the ink.

Completeness of Drying

Evaluate the point-to-point resistance along one of the screened conductive paths after one pass through the drying oven or one cycle in a batch-drying oven. Run the substrate through another drying cycle. Measure the point-to-point resistance again along the same path and compare it to the original reading. If the resistance decreases by less than 10%, then the ink is essentially dry after the first drying cycle or pass through the oven. If the resistance decreases by more than 10%, then more drying time is required to completely remove the solvent.

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.