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Innovative Chemistry For High-Tech Applications

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AG-510

SILVER FILLED ELECTRICALLY CONDUCTIVE SCREEN PRINTABLE INK/COATING

AG-510 is a unique electrically conductive silver filled ink designed for screen printing in flex circuit, membrane switch, touch screens and other additive circuit applications where faster drying is required. AG-510 can be thinned with solvent for spraying or dipping for EMI/RFI shielding applications. AG-510 is extremely tough, scuff resistant, crease resistant and has excellent adhesion to polyester, polyimide and most other substrates. For optimal adhesion to indium tin oxide (ITO) substrates used in touch screen and EL applications, we recommend using AG-500 silver conductive ink.

AG-510 is designed to give a good balance between long open time on screens and short drying time in subsequent drying processes. Conductive Compounds, Inc. can adjust the rheology of AG-510 to allow for more open time or quicker drying to accommodate different screening and drying operations. AG-510 is compatible with our UV curable dielectrics, all of our conductive epoxy adhesives and our UV curable component encapsulants and conformal coatings.

AG-510 can be blended with C-100 carbon resistive ink to give intermediate resistivity ranges.

TYPICAL PROPERTIES

Appearance	Thixotropic Silver Colored Paste
Viscosity	
SC4-14 spindle @ shear 2, 25° C	9,000 cps
Thixotropic Ratio	1.8 – 2.2
Drying Schedule	90 seconds to 4 Minutes At 250° F. (May Be Longer Or Shorter Depending Upon Oven Heat Profile And Air Flow)
Shelf Life	6 Months In Unopened Container
Total % NV Solids	68% +/- 2%
Hegman Gage	<50.0 μ
Volume Resistivity (ref. ASTM D-257)	2.0 x 10 ⁻⁴ Ω-cm
After 10 Creases, 1 mil Dry Film	
On 5 mil Mylar	5.0 x 10 ⁻⁴ Ω-cm
Surface Resistivity	.015 Ω/Square

MORE INFORMATION ON REVERSE SIDE OF SHEET

NOTE: Although the above properties are accurate to the best of our knowledge, Conductive Compounds, Inc. 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

AG-510 FASTER DRYING SILVER FILLED ELECTRICALLY CONDUCTIVE SCREEN PRINTABLE INK/COATING

APPLICATION GUIDELINES

For screening, a monofilament polyester (157 to 230 mesh) or a stainless steel (165 to 325 mesh) screen is recommended, with emulsion thickness between .001" and .004". A polyurethane squeegee with a Shore 'A' durometer between 60 and 70 is recommended. Always mix ink thoroughly before using, as silver will settle.

For thinning and cleanup, use carbitol acetate or dibasic ester solvents. If faster drying time is required, contact Conductive Compounds, Inc. 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.

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.

To check 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.

The above guidelines are intended to provide a starting point for evaluation. Conductive Compounds, Inc. recognizes that each customer's manufacturing process is unique, and we can customize the rheology of AG-510 to conform to the process parameters. We are also available to provide on-site technical assistance to resolve your processing issues. Call us to discuss your application in more detail.

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