



## AG-919 HEAT STABLE SILVER INK

### Description

AG-919 Heat Stable Silver Ink is a silver-filled electrically conductive screen printable ink or coating designed to operate in higher temperatures.

### Features

- Heat stable at 175°C to 200°C depending on time at temperature
- May be used as a seed layer for plating processes
- Thin with solvent for spraying or dipping for EMI/RFI shielding applications
- Tough and scuff resistant
- Excellent adhesion to most metal surfaces, polyester, polyimide, and polycarbonate films
- Outstanding crease resistance
- Compatible with our UV curable dielectrics, silver/silver chloride inks, conductive epoxy adhesives and UV curable component encapsulants.

### Applications

- Flex circuits
- Membrane switches
- EMI/RFI shielding
- Base layer for plating processes
- Other printed electronic applications

### Application Guidelines

AG-919 will settle when stored in sealed containers over a period of time. It is essential to mix the material thoroughly before use to redisperse any settled silver particles and to return the ink to a more desired viscosity.

### *Preliminary* TYPICAL PROPERTIES

Appearance	Thixotropic silver colored paste
Surface Resistivity	<.040 Ω/square/mil
Hegman Gauge	<25 μ
Total % NV Solids	66.00 - 77.00%
Viscosity: Brookfield DV-III SC4-14 spindle @SR 20, 25°C	As reported
Thixotropic Ratio	~2.8

For screen printing, 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.

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 or film laminates, applied over the ink.



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.

If solvent-based inks are left on screens for any length of time, the ink will gradually thicken as solvent evaporates. If the ink is to be left on an inactive press for any length of time, solvent evaporation can be minimized by pooling the ink to reduce the surface 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.

### **Thinning & Cleanup**

If necessary, use Solvent 20 to thin the ink. Use Solvent 10 or suitable screen cleaner for cleaning the surface of a screen or tools.

### **Storage & Shelf Life**

Store in a dry area at 25°C (room temperature). Shelf life is 6 months in unopened container.

### **Disposal**

The material and its container must be disposed

in accordance with all local, state, federal and/or international regulations.

### **Handling**

Consult Safety Data Sheet (SDS) for details on the handling procedures and product hazards prior to use. If you have any questions regarding handling precautions or product hazard, please email [productsafety@kayakuAM.com](mailto:productsafety@kayakuAM.com).

### **Disclaimer**

Notwithstanding anything to the contrary contained in any sales documentation, e.g., purchase order forms, all sales are made on the following conditions:

All information contained in any Kayaku Advanced Materials, Inc. product literature reflects our current knowledge on the subject and is, we believe reliable. It is offered solely to provide suggestions for the customer's own experiments and is not a substitute for any testing by the customer to determine the suitability of any Kayaku Advanced Materials, Inc. products for any particular purpose. This information may be subject to revision as new knowledge and experience becomes available, but Kayaku Advanced Materials, Inc. assumes no obligation to update or revise any data previously furnished to a customer; and if currency of data becomes an issue, the customer should contact Kayaku Advanced Materials, Inc. requesting updates. Since Kayaku Advanced Materials, Inc. cannot anticipate all variations in actual end uses or in actual end-use conditions, it makes no claims, representations, or warranties, express or implied including, without limitation any warranty of merchantability or fitness for a



particular purpose and the customer waves all of the same. Kayaku Advanced Materials, Inc. expressly disclaims any responsibility or liability and assumes no responsibility or liability in connection with any use of this information including, without limitation, any use, handling, storage or possession of any Kayaku Advanced Materials, Inc. products, or the application of any process described herein, or the results desired or anything relating to the design of the customer's products. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent right.