



TECHNICAL DATA SHEET

WB-1078 Water-Based Silver Conductive Ink

Description

- Low viscosity, silver filled, water-based ink with high solids
- Excellent conductivity especially in a very thin film trace down to 5 to 6 μm dried thickness
- For gravure printing, rotary screen, high-speed printing processes and suitable for spray & coating applications
- Increased anti foaming properties.
- Dries very quickly to a hard, durable and very flexible film
- Excellent adhesion to a wide variety of plastic and metal substrates
- Applications include RFID and cell phone antennas, medical EEG & EKG sensors, and EMI/RFI shielding
- Can be cross-linked to an even harder, more durable film with the addition of a crosslinking component to the ink prior to printing.

Compatible with our silver and carbon inks, UV curable dielectrics, conductive epoxies adhesives, UV curable component encapsulants and conformal coatings.

WB-1078 is designed specifically for **gravure, rotary screen** and other **high-speed** printing processes.

TYPICAL PROPERTIES

Appearance	Thixotropic silver colored liquid
Viscosity: Brookfield SC4-14, @ shear rate of 20 rpm, 25°C	<4,000 cps
Drying Schedule	60-90 seconds at 145°C, 6 μm dry film thickness (may be longer or shorter depending upon oven heat profile & air flow)
Shelf Life	6 months in unopened container

PHYSICAL PROPERTIES (1 MIL DRY FILM)

Hegman Gauge	<10.0 μ
Volume Resistivity (ref. ASTM D-257)	
After 1 Crease, 1 mil Dry Film	2.0 x 10 ⁻⁴ Ω -cm
On 5 mil Mylar	<5.0 x 10 ⁻⁴ Ω -cm
Surface Resistivity (ref. ASTM D-257)	< .025 Ω /square/mil
Pencil Hardness (ref. ASTM D3363-05)	2H minimum

WB-1078 Water-Based Silver Conductive Ink

Application Guidelines

WB-1078 can be applied by gravure, rotary screen and other high speed printing processes. dip, roll or knife over roll coating, and curtain coating. When used to saturate foam and other porous materials in a dip process, it is recommended that excess material be squeezed from the material before oven drying using nip rollers.

Thinning & Cleanup

WB-10178 can be thinned, if necessary, by adding small amounts of water and mixing well. Do not use solvents to thin WB-1078. It is recommended that WB-1078 be cleaned up immediately after processing using water. If WB-1078 has started to dry on surfaces, solvents such as MEK, acetone or toluene can be used to remove it. If it is allowed to dry completely on surfaces, cleanup may require aggressive abrasion and the use of solvents to remove it.

Drying

Completeness of drying can be verified by measuring electrical surface resistivity of dried material using a box electrode, or point electrodes hooked up to a multimeter. After initial drying, measure surface resistivity once more. If the drop in resistivity between the first and second drying cycle is less than 10%, drying can be considered complete after first cycle. For more critical applications, or where outgassing may be a concern the difference in resistivity between the two drying cycles should be less than 5%, and consideration should be given to post baking the material in batch ovens for 30 to 60 minutes at 121– 149°C .

Completeness of Drying

Evaluate the point-to-point resistance along one of the printed 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.

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.