

EI-1605 Ink

GOLD CONDUCTIVE INK

Product Description

EI-1605 is a brand-new MOD gold ink from Electroninks designed specifically for aerosol-jet printing application that enables 3D non-contact digital print demanding requirements for high conductivity. This unique gold ink displays uninterrupted multi-hour jetting performance suitable for high volume production line. This ink series shows good chemical compatibility and adhesion on multiple surface type including glass, polyimide, SiN, and SiO₂ wafers.

Processing Conditions

Handling

- Store in the refrigerator (4 °C) in a tightly sealed container absent from light
- If sedimentation occurs, filtration through 0.25 µm PTFE filter is preferred
- Print and cure in a well-ventilated area

Substrate Pretreatment

- Rinse substrate with isopropanol and dry in a convection oven at 140 °C for 10 minutes

Print and Cure Temperatures

- Print on room temperature platen
- Quickly transfer to a convection oven and anneal at 300 °C for 1 hour
 - If necessary, a ramp curing profile from a lower temperature to 300 °C – hold at 300 °C for 1 hour – can be employed to improve film surface smoothness

Note: A bubbler solution is not included with this ink.

Table 1 – Composition Properties

Test	Properties
Viscosity (25 °C, 1875 rps)	0.8 cP
Solid Content (@300 °C)	3 – 4 wt%
Color	Transparent
Shelf Life (Refrigerated ≤ 4 °C)	3 months
Clean-up Solvent	Isopropanol, Acetone

Note: Shelf life is from date of qualification in original seal. Do not return product to original container, due to possible contamination during use.

Table 2 – Aerosol-jet Specific Parameters and Properties

Item	Value
Substrate	Glass
Nozzle Diameter (µm)	150
Atomizer Current (mA)	300 – 350
US Carrier Gas (sccm)	18 – 20
Sheath Gas (sccm)	40 – 60
Platen Temperature (°C)	25
Pass	4–12 (for best results)
Final Curing Temperature (°C)	100 °C – 300 °C ramp; 300 °C for 1 hr
Pattern Length (cm)	2
Resistance of Pattern (Ω)	0.99
Line Width (mm)	2
Final Thickness (µm)	1
Cross Section Area (µm ²)	960
Resistivity (µohm-cm)	5.3
Conductivity % Gold	46

Disclaimer: The information provided in this Technical Data Sheet (TDS) is compiled in good faith and obtained using procedures performed at Electroninks and to the best of Electroninks' knowledge. The information on this TDS has been updated on the date printed, and latest versions can be obtained upon request. The customer is responsible for conducting tests to determine whether Electroninks's products are compatible with the customer's substrates and specific applications

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Figure 1 – After Annealing Picture and SEM Imaging

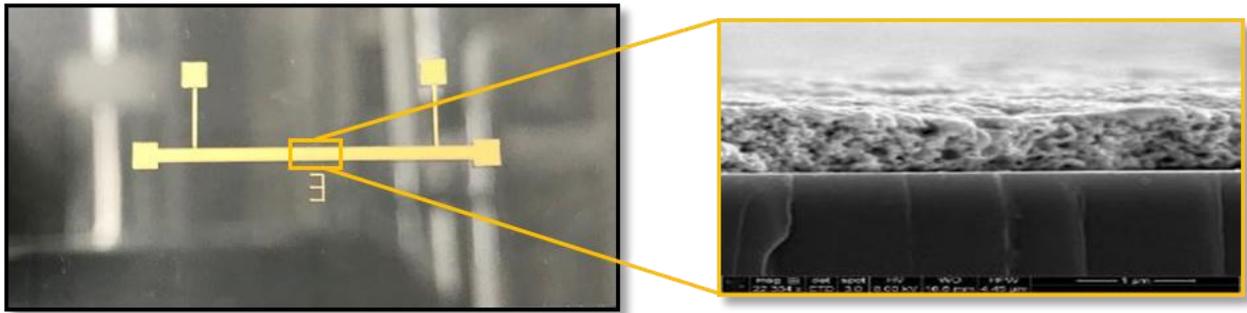
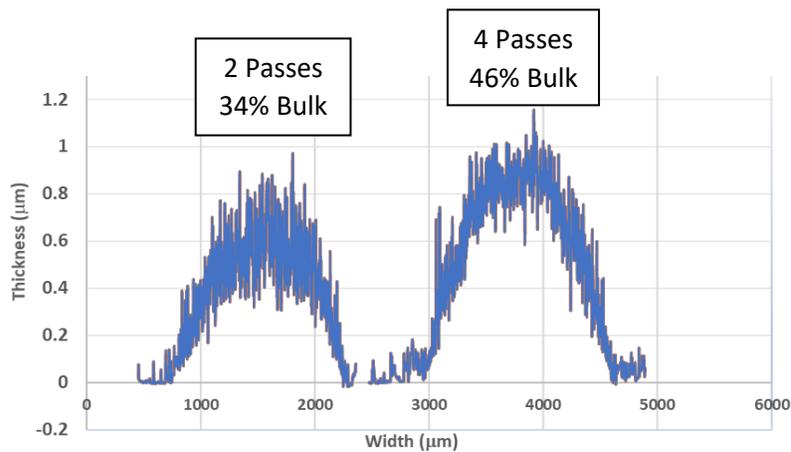


Figure 2 – Higher Conductivity with Increasing Passes



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