

CF-001

Coating Fluid for Thin Copper Film

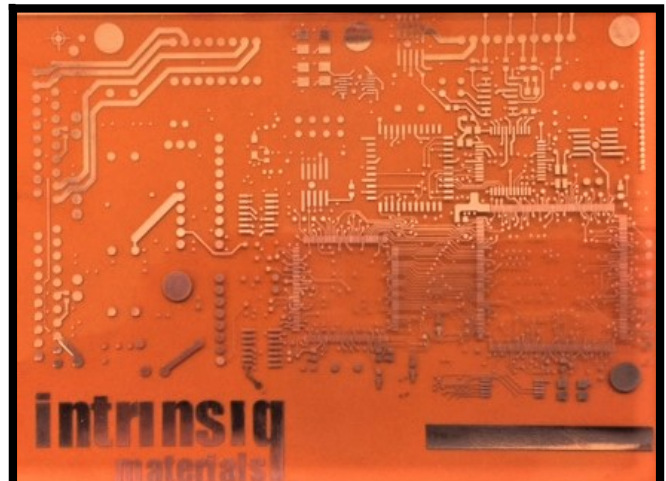
A nanocopper-based seed layer for printed electronics

Product Overview

CF-001 is a slot-die coatable ink formulation, designed to produce an ultra-thin copper seed layer on polyimide

CF-001 can cost-effectively replace thin copper foils and enables ultra-fine line processing

Ultra-thin copper seed film achieves thicknesses of $<1 \mu\text{m}$ (typically 600 nm)



An image of CF-001 after copper film seed layer applied, photonic sintering, electroplating and etching

Processing

Deposition Method	Slot-die (roll to roll coating)
Coated Thickness	Typically 600 nm (prior to electroplating)
Line Width Resolution	Typically $>3 \mu\text{m}$ (determined by photolithography equipment)
Substrate	Polyimide film
Surface preparation	Substrate should be free from grease or particulate
Clean up solvent	Isopropanol
Typical Drying Conditions	Forced air convection @ 120°C , 10–15 minutes, or IR dryer @ 120°C , 10 minutes.
Typical Sintering Conditions	Broadband flash lamp (e.g. Novacentrics Pulseforge™ or Xenon S-5000™)
Post Sintering Process	Standard semi-additive printed circuit board processes

Applications

CF-001 copper film formulation is typically used for high density interconnects and is designed to be compatible with polyimide common in the electronics industry. Applications include:

- Microelectronic circuits
- Sensors & Antennas
- Toys & Gaming
- Mass production electronics

General Use, Storage and Shelf Life

The product should be kept sealed in its container and stored at room temperature (<25°C). The shelf life of unopened containers is six months from date of shipment.

Prior to use, please ensure that the ink is mixed thoroughly for a few minutes taking care to avoid introducing air into the ink.

Filtering is recommended prior to use.

Safety and Handling

For safety and handling information relating to the use of this product, please refer to the Safety Data Sheet (SDS).

Technical Support

Intrinsiq works closely with its customers to ensure this product is optimized for their process. For more product information or technical support, please contact us.

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Typical Compositional properties

Solids content (Weight %)	17.5 %
Viscosity [cP] (Brookfield DV-E @ 10 rpm 20°C)	9
Surface Tension [mN/m]	30
Density [g/ml]	1.12

Typical Electrical & Physical Properties (Sintered)

General Resistivity	(Sufficient for electroplating)
Adhesion (Before plating) (ASTM D3359)	5B
Adhesion (After plating) (IPC-TM-650 Method 2.4.9)	9.5 N/cm
Sintered Thickness [nm] (Prior to electroplating)	~600

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