

Metalon® Conductive Inks for Printed Electronics

novacentrix.com

Metalon® CI-004

Copper Inkjet Ink for Polyimide Substrates

Product Overview

CI-004 is a nanosized metallic copper formulation, dispersed in a polymeric matrix suitable for high resolution inkjet printing. CI-004 is formulated to provide excellent conductivity, flexibility and adhesion with polyimide. CI-004 can be used in a variety of printing equipment and can deliver drop sizes as low as 4 picolitres.

Applications

CI-004 ink is designed to be compatible with polyimide to fabricate electronic circuitry common in flexible printed circuit boards. Applications include: LED lighting, microelectronics, membrane switches, and sensors & antennas.

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.



CI-004 printed on polyimide after a reducing formic acid/argon atmosphere processed @250°C 45 minutes.

Before use, please ensure that the ink is mixed thoroughly for a few minutes taking care to avoid introducing air to the ink. Filter the ink ($\leq 5 \mu\text{m}$ glass microfibre or nylon) prior to filling up the reservoir.

Safety and Handling

For safety and handling information, please refer to the Material Safety Data Sheet (MSDS).

Typical Compositional Properties	Solids Content (Weight %) 20
	Viscosity [cP] (Brookfield DVE @ 10 rpm, 20°C) ~ 30
	Surface Tension [mN/m] (Static) 31
	Density [g/ml] 1.15
Typical Electrical & Physical Properties (Sintered)	Bulk Resistivity [$\mu\Omega\text{-cm}$] ~ 12
	Adhesion (ASTM D3359) 5B



Contact us today to learn more.

For detailed application information or additional assistance: inktechnicalsupport@novacentrix.com
 Ink can be ordered at store.novacentrix.com



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Processing	Printing Equipment	Industrial piezo inkjet print heads such as: Dimatix Sapphire, Konica Minolta KM512, Dimatix DMP2850-10 pl
	Line Resolution	As low as 50 µm @ 900 DPI <i>(Depending on deposition equipment and DPI)</i>
	Line Thickness/Height <i>(sintered)</i>	~ 500 nm <i>(Depending on drop volume)</i>
	Substrates	Designed for polyimide although others can be used
	Clean up solvent	Acetone, isopropanol
	Surface Preparation	Clean & dry, no grease or contaminants <i>(Plasma treatment can also be used)</i>
	Typical Drying Conditions	Can be dried in standard convection ovens and vacuum ovens @ 60°C, 30 – 60 minutes, or
		IR dryer @ 80°C, 15 minutes, or
		Forced air convection @ 80°C, 5 – 10 minutes
	Typical Sintering Conditions	Photonic sintering (NovaCentrix PulseForge®), or Laser – 808-1064nm, or
Reducing atmosphere of argon or nitrogen, with 3% formic acid vapor @ 250°C for 45 minutes dwell time		
Shipping and Packaging	Standard sample order is 100g or multiples of 100g. Bulk packaging is also available.	



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