Metalon® Conductive Inks for Printed Electronics

www.novacentrix.com

Metalon® ICI-002HV

Nanocopper Ink – Aqueous dispersion

ICI-002HV is an aqueous, copper oxide-based ink which is transformed post-printing into a metallic copper thin film after it is processed with PulseForge® tools. It is designed to produce conductive traces on both porous and non-porous, low-temperature substrates. ICI-002HV is specially formulated for compatibility and stability with higher-loading inkjet systems such as those from Xaar and Dimatix. A printing waveform for Dimatix DMP heads is available.

Performance Properties

Metalon ICI-002HV produces, after printing and curing, conductive, metallic copper traces with electrical resistivities as low as 1.7× bulk Cu resistivity. ICI-002HV MUST be processed with PulseForge® tools from NovaCentrix® to attain the stated resistivity values. Thermal curing is not applicable. Printed traces of ICI-002HV are not conductive prior to processing with PulseForge® tools.

Sample Conductivity

	ICI-002HV	Units
Thin film resistivity	2.8 - 4.1 μΩ·cm	Micro-ohm-cm
Thin film sheet resistance	65 - 95 mΩ / □	Milliohm/square
Bulk resistivity comparison	1.7 - 2.4×	ρ(thin film)/ρ(bulk Cu)

Sample Information

Substrate[1]: Novele™ IJ-220 (a coated PET)
Printer: Dimatix Materials Printer (DMP-2800 Series)
Post-Process Tool: PulseForge® 3200 or 3300 in 6" configuration
Environment: Atmosphere – no special preparation

Physical Properties

General Description ..... Water-based, copper oxide (CuO) ink converted to Cu after PulseForge® curing
Viscosity .....9 – 12 cP
Specific Gravity 1.21
Flash Point.....Non-flammable
Particle Size .....Malvern Instruments Zetasizer (dynamic light scattering method) Z-average = 110 – 130 nm
CuO Content .....16 wt%

Shipping and Packaging

Standard sample order is 50 mL or multiples of 50 mL. Bulk packaging is also available.

[1]recommended for use on the following substrates: Novele™ IJ-220, uncoated PET, inkjet paper
not currently recommended for use on the following substrates: polyimide, paper, glass

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Contact us today to learn more.
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