

Metalon[®] Conductive Inks for Printed Electronics

novacentrix.com

Metalon[®] CI-005

Copper Inkjet Ink for TCO, ITO & Glass Substrates

Product Overview

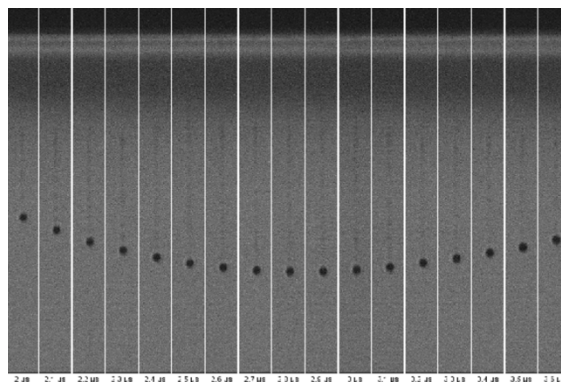
CI-005 is a nanosized metallic copper formulation, dispersed in a polymeric matrix suitable for high resolution inkjet printing. CI-005 is formulated to provide excellent conductivity and adhesion with glass, ITO & TCO coated glass. CI-005 can be used in a variety of printing equipment and can deliver drop sizes as low as 4 picolitres.

Applications

CI-005 ink is designed to be compatible with glass and coated glass to fabricate electronic circuitry common in rigid printed circuits. Applications include: touch screen, display, photovoltaic, 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.



On pulse width in microseconds vs. velocity for CI-005 in a KM512SHX print head.

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 %) | 26 |
| | Viscosity [Pa.S] (Brookfield DVE @ 10 rpm, 20°C) | ~ 13 |
| | Surface Tension [mN/m] (Static) | 30 |
| | Density [g/ml] | 1.27 |
| Typical Electrical & Physical Properties (Sintered) | Bulk Resistivity [$\mu\Omega\text{-cm}$] | ~ 9 |
| | 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 ink jet 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 | Soda lime glass, borosilicate glass, ITO & TCO coated glass |
| | 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 | Laser sintering 808 nm – 1064 nm, or |
| Reducing atmosphere of argon or nitrogen, with 3% formic acid vapor @ 250°C for 60 minutes dwell time | | |
| Shipping and Packaging | Standard sample order is 100g or multiples of 100g. Bulk packaging is also available. | |



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