

# CI-005

## Copper Inkjet Ink for TCO, ITO & Glass Substrates

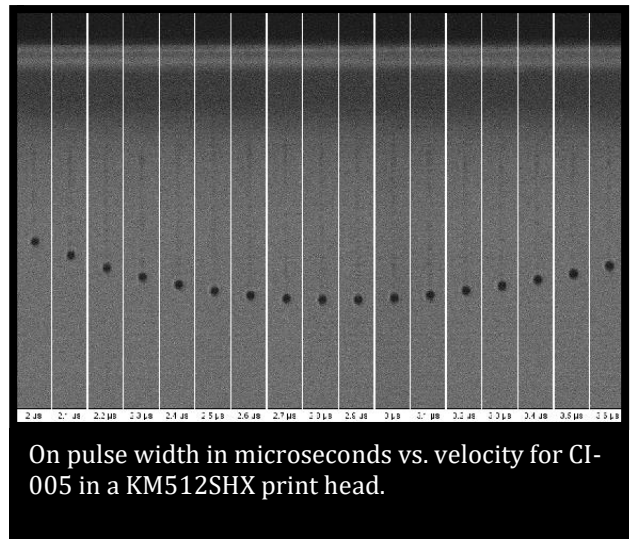
*A nanocopper-based ink for printed electronics*

### 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

This ink can be used in a variety of printing equipment and can deliver drop sizes as low as 4 picolitres



### Processing

<b>Printing Equipment</b>	Industrial ink jet print heads such as: Dimatix Sapphire, Konica Minolta KM512, Dimatix DMP2850 – 10 pL
<b>Line resolution</b>	As low as 50 $\mu\text{m}$ @ 900 DPI (Depending on deposition equipment and DPI)
<b>Line Thickness/Height</b> (sintered)	~ 500 nm (Depending on drop volume)
<b>Substrates</b>	Soda lime glass, borosilicate glass, ITO & TCO coated glass.
<b>Clean up solvent</b>	Acetone, isopropanol
<b>Surface Preparation</b>	Clean & dry, no grease or contaminants (Plasma treatment can also be used)
<b>Typical Drying Conditions</b>	Can be dried in standard convection ovens and vacuum ovens @ 60°C, 30–60 minutes  IR dryer @ 80°C, 15 minutes  Forced air convection @ 80°C, 5–10 minutes
<b>Typical Sintering Conditions</b>	Laser sintering 808 nm – 1064 nm,  Formic acid reducing atmosphere @ 250°C for 60 minutes dwell time

## 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
- 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.

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 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

<b>Solids content</b> (Weight %)	26
<b>Viscosity [cP]</b> (Brookfield DVE @ 10 rpm, 20°C)	~13
<b>Surface Tension [mN/m]</b> (Static)	30
<b>Density [g/ml]</b>	1.27

## Typical Electrical & Physical Properties (Sintered)

<b>Bulk Resistivity</b> [ $\mu\Omega\text{-cm}$ ]	~9
<b>Adhesion</b> (ASTM D3359)	5B