Product Data Sheet

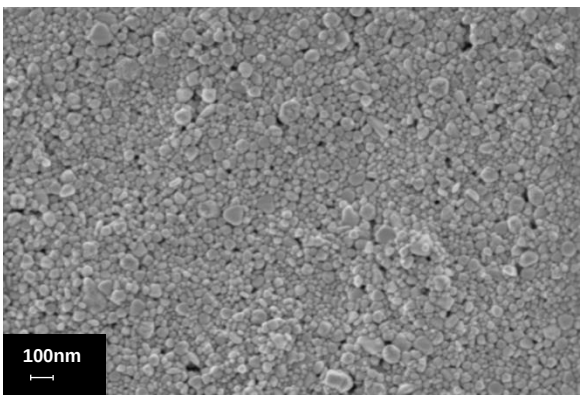
Product Catalog Number: Sicrys™ IC25EG–1

General Information

Sicrys™ IC25EG-1, a conductive ink based on single-crystal **copper nanoparticles** in ethylene glycol (EG), is suitable for various digital printing technologies such as Inkjet and Aerosol systems. The ink offers long shelf life, storage at room temperature (under Argon), low viscosity and reliable jetting. Printed and laser sintered patterns provide low electrical resistivity and good adhesion to substrates. Applications include, but are not limited to, FPD, RFID and PCB.

Ink Properties

Properties	Typical Values
Metal Loading, Cu (w/w)	25 %
Cu(0) in Copper Nano Particles	>90 %
Particle Size (Lumisizer®)	d_{50} = 50 nm d_{90} = 120 nm
Specific Gravity	1.43 g/ml
Viscosity (Brookfield, Cone Spindle 40, 25°C)	32 cP
Surface Tension (Pendant Drop Method)	47 dyn/cm
Open Time (Ricoh E3 printhead, 35°C)	5 min
Particle Size and Morphology (HRSEM)	See HRSEM Image



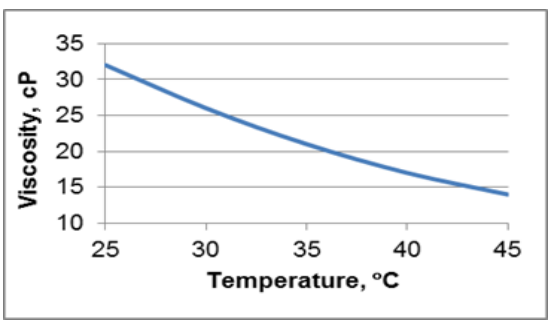
Nano Cu, HRSEM Image, x100,000

Electrical and Adhesion Properties

Sintering Conditions (on glass)	**Resistivity** (4PP)
Laser Sintering	≤5 μΩ·cm (≤3 bulk)
Photonic Sintering	≤32 μΩ·cm (≤20 bulk)
Thermal 300°C / 30 min (under Argon)	≤90 μΩ·cm (≤55 bulk)

Adhesion (not limited) to: Kapton®, PA, LCP, Glass

(ISO-2409, no cuts)

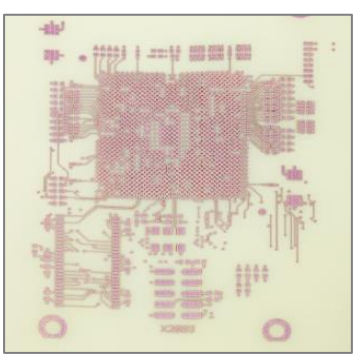


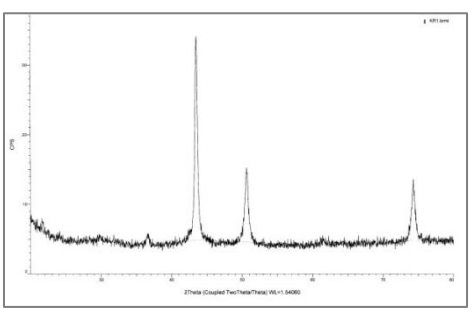
Viscosity Profile

Compatible printheads#

Ink works well, among others, with printheads:

KM1024, KM1024i, Ricoh E3, Aerosol



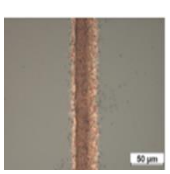


XRD Pattern of Nano Copper Particles

Product Applications

Digital Printing (Inkjet, Aerosol)

Printed Electronics



 # - Printheads listed here were tested and perform well. Other compatible printheads may also be applicable.

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