

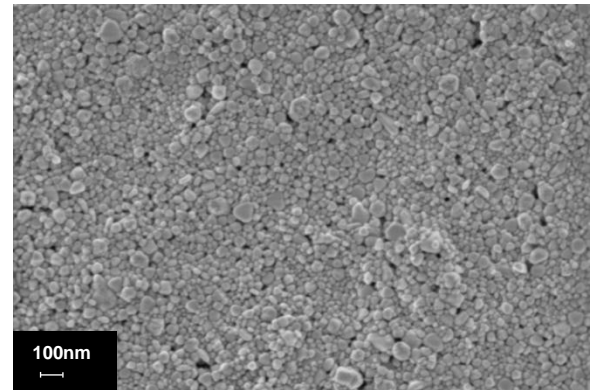
General Information

Sicrys™ IC50TM-8, a conductive ink based on single-crystal copper nanoparticles in triethylene glycol monomethyl ether (TGME), is suitable for various digital printing technologies such as Inkjet and Aerosol systems. The ink offers high copper loading, low viscosity, reliable jetting with high open time, good printability, long shelf life, storage at room temperature (under Argon). Printed and laser sintered patterns provide low electrical resistivity and good adhesion to substrates.

* This product is still in R&D stage.

Ink Properties

Properties	Typical Values
Metal Loading, Cu (w/w)	50 %
Cu(0) in Copper Nano Particles	>95 %
Particle Size (Lumisizer®)	d ₅₀ = 50 nm d ₉₀ = 120 nm
Specific Gravity	1.85 g/ml
Viscosity (Brookfield, Cone Spindle 40, 25°C)	32 cP
Surface Tension (Pendant Drop Method)	34 dyne/cm
Particle Size and Morphology (HRSEM)	See HRSEM image



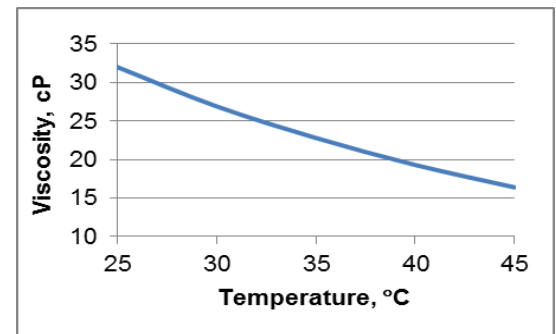
Nano Cu, HRSEM Image, x100,000

Electrical and Adhesion Properties

Sintering Conditions (on glass)	Resistivity (4PP)
Laser Sintering	≤5 μΩ·cm (≤3 bulk)
Thermal 300°C/30 min (under Argon)	≤120 μΩ·cm (≤70 bulk)

Adhesion to: Kapton, FR4, ITO, glass

(ASTM 3359-09 or ISO-2409)



Viscosity Profile

Compatible printheads

Ink works well, among others, with printheads:

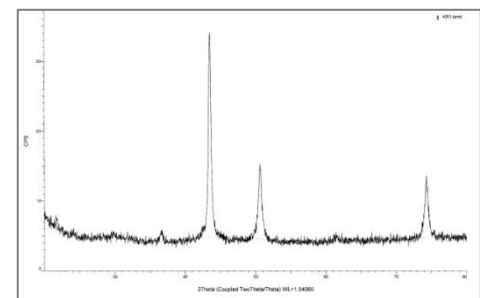
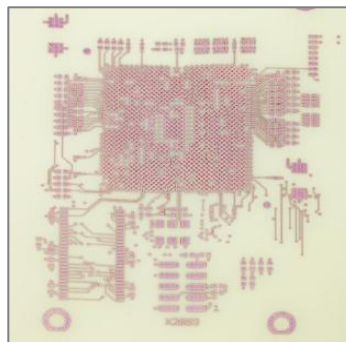
KM1024/i, Ricoh E3, DMC-11610, Air Brush

Product Applications

Digital Printing (Inkjet, Aerosol)

Printed Electronics:

FPD, RFID, PCB



XRD Pattern of Nano Copper Particles