

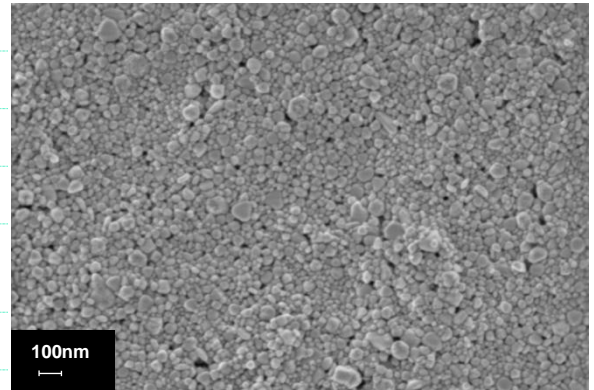
General Information

Sicryst™ 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.

* This product is still in R&D stage.

Ink Properties

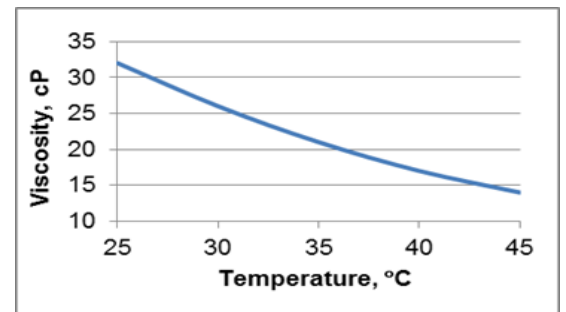
Properties	Typical Values
Metal Loading, Cu (w/w)	25 %
Cu(0) in Copper Nano Particles	>90 %
Particle Size (Lumisizer®)	d ₅₀ = 50 nm d ₉₀ = 120 nm
Specific Gravity (Calculated)	1.43 g/ml
Viscosity (Brookfield, Cone Spindle 42, 25°C)	32 cP
Surface Tension (Pendant Drop Method)	47 dyne/cm
Particle Size and Morphology (HRSEM)	See HRSEM image



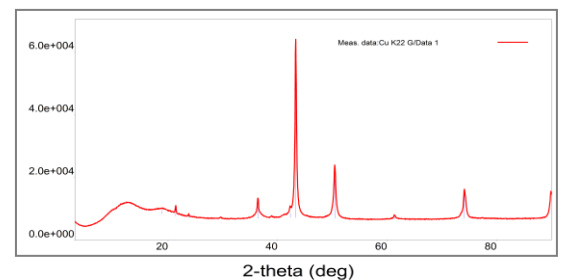
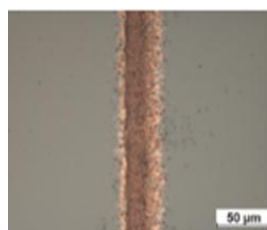
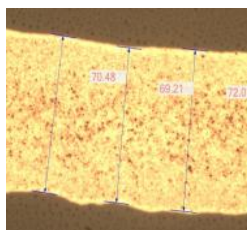
Nano Cu, HRSEM Image, x100,000

Electrical Properties

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



Viscosity Profile



XRD Pattern of Nano Copper Particles