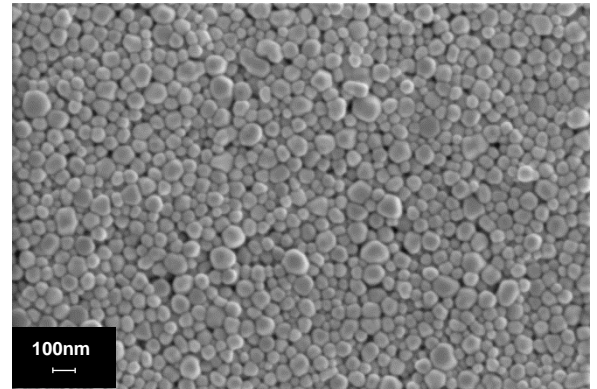


General Information

Sicrys™ I50TM-119, a conductive ink based on single-crystal silver nanoparticles in triethylene glycol monomethyl ether (TGME), has been designed for inkjet printing and low temperature sintering applications. The ink offers a unique combination of properties, including high silver loading, low viscosity, storage at ambient conditions, long shelf life, reliable jetting and good printability. Printed patterns, sinterable at low temperatures, provide low electrical resistivity, good adhesion to a wide range of substrates and durability to humid and aqueous environments.

Ink Properties

Properties	Typical Values
Metal Loading, Ag (w/w)	50 %
Particle Size (Lumisizer®)	d50 = 85 nm d90 = 120 nm
Specific Gravity (Calculated)	1.90 g/ml
Viscosity (Brookfield, Cone Spindle 42, 25°C)	34 cP
Surface Tension (Pendant Drop Method)	30 dyne/cm
Particle Size and Morphology (HRSEM)	See HRSEM image

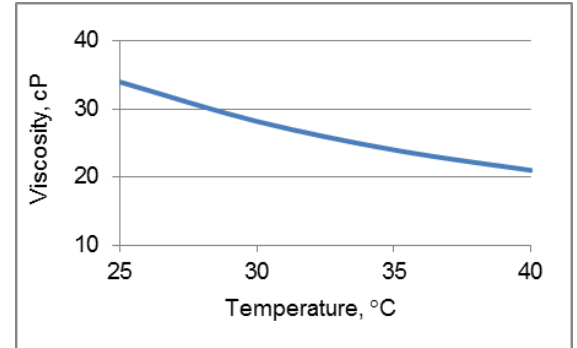


Nano Ag, HRSEM Image, x100,000

Electrical and Adhesion Properties

Substrate - Sintering	Resistivity (4PP)	Sheet Resistance
ITO - 150°C/30min	≤10 μΩ-cm (≤6.3 bulk)	30 mΩ/□ (3.5 μm)
Kapton - 150°C/30min	≤10 μΩ-cm (≤6.3 bulk)	20 mΩ/□ (6 μm)
PET - 130°C/30min	≤12 μΩ-cm (≤7.5 bulk)	15 mΩ/□ (8 μm)

Adhesion (ASTM 3359-09)	Rating
ITO, Glass, PET and Kapton	5B



Viscosity Profile

Environmental Reliability

Tests (Substrate)	Adhesion Rating
144hr at 85°C/100% Relative Humidity (ITO)	5B
30min Soaking in DIW (PET)	5B

Product Applications

Digital Printing (Inkjet)
Printed Electronics: FPD, RFID, PCB

