

# Conductive Silver Ink

## XTPL Ag Nanoink CL 60

### PRODUCT DESCRIPTION & FEATURE

XTPL Ag Nanoink CL 60:

- Is a conductive ink designed for various applications, mostly suited for printed electronics
- Can be printed on different substrates including glass or flexible foil
- Displays high uniformity
- Designed with high silver content for better conductive performance

### TYPICAL PROPERTIES

#### PRODUCT SPECIFICATION

Silver content [wt. %]	56 ± 2
Density [g.cm <sup>-3</sup> ]	2.00 ± 0.15
Average nanoparticles size [nm] (TEM)	35 – 50
Shape of nanoparticles	Spherical
Viscosity [cP] (25 °C, shear rate = 0.2 s <sup>-1</sup> )	30000 - 70000
Solvent(s)	Glycol(s)

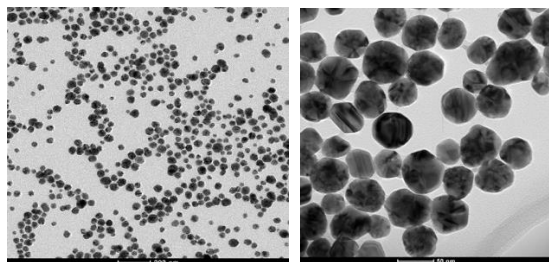


Fig. 1. TEM image of silver nanoparticles

### FEATURES

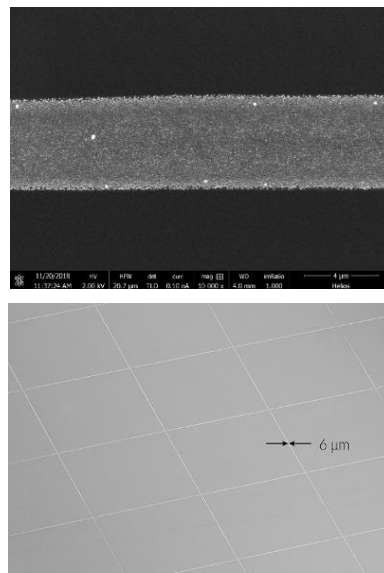


Fig. 2. SEM images of printed conductive line

### SAFETY AND HANDLING

Before using the product read the Material Safety Data Sheet (MSDS) and product label:

- Avoid skin and eye contact, XTPL Ag Nanoink CL 60 can cause eye and skin irritation. If ingested, consult a physician immediately
- Use appropriate safety equipment (e.g. latex gloves, safety glasses)
- Wash hands thoroughly after handling

### STORAGE AND HANDLING

- Keep away from sunlight or other direct light sources. Store in between 4 - 6 °C, do not freeze
- Allow closed bottle to stabilize at room temperature prior to mixing, opening and use
- Mixing recommendation: mechanical agitation (e.g. vortex) and ultrasonication
- Minimize exposition of open bottle to external atmosphere to a maximum (prevention of solvent evaporation and spilling hazard)

PARAMETER	VALUE
Material	Silver nanoparticles
Shape	Spherical
Silver content [wt. %]	56 ± 2
Density [g.cm <sup>-3</sup> ]	2.00 ± 0.15
Average nanoparticles size [nm] (DLS)	80 - 105
Average nanoparticles size [nm] (TEM)	35 - 50
Viscosity [cP] (25 °C, shear rate = 0.2 s <sup>-1</sup> )	30000 - 70000
Storage conditions	4 – 6 °C; stored away from sunlight or other direct light sources
Shelf life (under given storage recommendations)	≥ 3 months
Packaging	Polypropylene bottle
MSDS in English	Attached to the ink and available upon request

### Used abbreviations:

DLS: Dynamic Light Scattering

TEM: Transmission Electron Microscopy