

Conductive Silver Ink

XTPL Ag Nanoink CL34

PRODUCT DESCRIPTION & FEATURE

XTPL Ag Nanoink CL34:

- Is a conductive ink designed for various applications, mostly suited for printed electronics
- Designed with lower viscosity for alternative printing compatibility requirements
- Displays high uniformity and conductivity
- Can be printed on different substrates such as glass, silicon nitrides & oxides and foils (Kapton, PET, PEN, PDMS) or silicon wafers

TYPICAL PROPERTIES

PRODUCT SPECIFICATION

Silver content [wt. %]	30 ± 2
Density [g.cm ⁻³]	1.50 ± 0.05
Average nanoparticles size [nm] (TEM)	35 – 50
Shape of nanoparticles	Spherical
Electrical resistivity [Ω.m]*	3.25 · 10 ⁻⁸
Viscosity [cP] (25 °C, shear rate = 2 s ⁻¹)	200 – 400
Solvent(s)	Glycol(s)

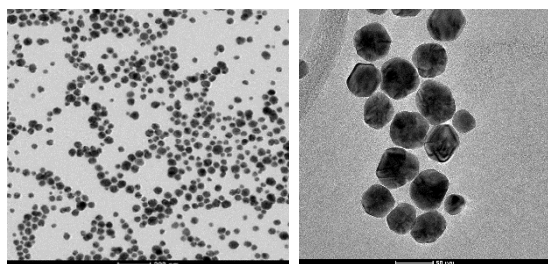


Fig. 1. TEM image of silver nanoparticles

FEATURES

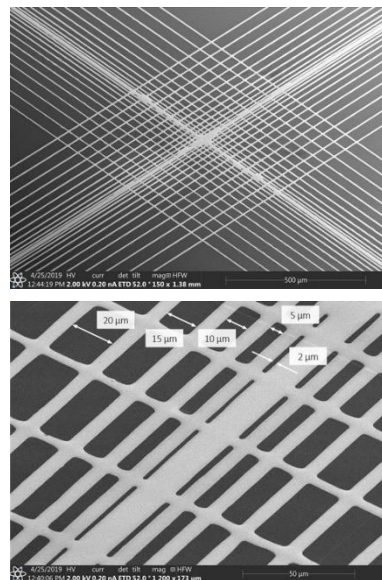


Fig. 2. SEM images of printed conductive line

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 CL34 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

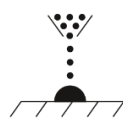
STORAGE AND HANDLING

- 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)

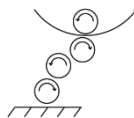
PARAMETER	VALUE
Material	Silver nanoparticles
Shape	Spherical
Solid content [wt. %] (2h, 185 °C)	34 ± 2
Silver content [wt. %]	30 ± 2
Density [g.cm ⁻³]	1.50 ± 0.05
Average nanoparticles size [nm] (DLS)	80 – 105
Average nanoparticles size [nm] (TEM)	35 – 50
Electrical resistivity [Ω.m]*	3.25 · 10 ⁻⁸ (50% Ag bulk conductivity)
Viscosity [cP] (25 °C, shear rate = 2 s ⁻¹)	200 – 400
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

*Sintering conditions: 250 °C; 40 minutes; Air

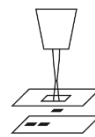
Compatible with:



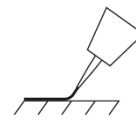
Aerosol jet



Flexography



LIFT



XTPL Ultra-Precise
Deposition

Used abbreviations:

DLS: Dynamic Light Scattering

TEM: Transmission Electron Microscopy