shaping global nanofuture

Conductive Silver Ink
XTPL Ag Nanoink IJ36

PRODUCT DESCRIPTION & FEATURES

XTPL Ag Nanoink IJ36:

- Is a conductive ink specifically designed to work with R&D & industrial Inkjet printers (1 & 10 pL cartridges) for various applications, mostly suited for printed electronics
- Displays high uniformity and conductivity
- Reduced clogging, over 1 month of printing without changing printhead parameters
- Can be printed on Kapton 500HN, PET, PEN, PEI, glass

TYPICAL PROPERTIES

PRODUCT SPECIFICATION	
Silver content [wt. %]	34 ± 2
Density [g.cm^{-3}]	1.2 – 1.4
Average nanoparticles size [nm] (TEM)	35 – 50
Shape of nanoparticles	Spherical
Electrical resistivity [Ω.m]*	3.95 · 10^{-8}
Viscosity [cP] (25 °C, Shear rate = 40 s^{-1})	26 – 30
Surface tension [mN/m] (25 °C)	30
Solvent(s)	Glycol ether

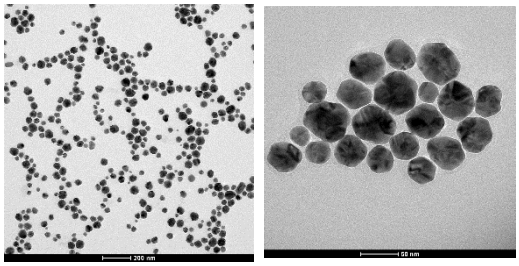


Fig. 1. TEM images of silver nanoparticles

FEATURES

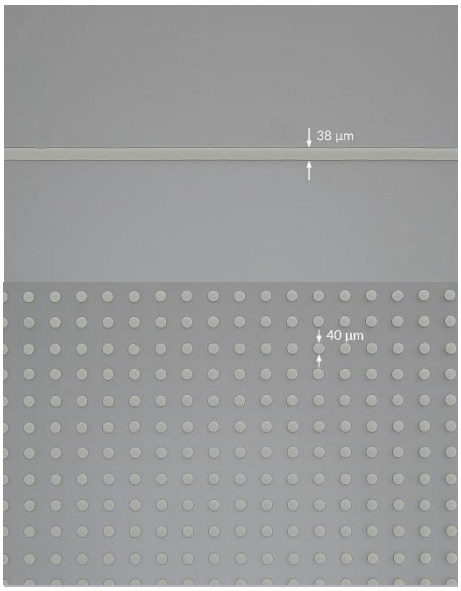


Fig. 2. Optical microscope images of printed conductive lines and dots dispensed from 1 pL cartridge on glass

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 IJ36 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

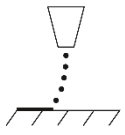
- Keep away from sunlight or other direct light sources. Store in between 4 – 6 °C, do not freeze
- Allow closed bottle to stabilize at room temperature prior to mixing, opening and use
- Mixing recommendation: mechanical agitation (e.g. vortex) and ultrasonication
- Minimize exposition of open bottle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

XTPL S.A.
ul. Stabłowicka 147, 54-066 Wrocław
www.xtpl.com

PARAMETER	VALUE
Material	Silver nanoparticles
Shape	Spherical
Solid content [wt. %] (2h, 185 °C)	36 ± 2
Silver content [wt. %]	34 ± 2
Density [$g.cm^{-3}$]	1.2 – 1.4
Average nanoparticles size [nm] (DLS)	80 – 105
Average nanoparticles size [nm] (TEM)	35 – 50
Electrical resistivity [Ω.m]*	$3.95 \cdot 10^{-8}$ (41% Ag bulk conductivity)
Viscosity [cP] (25 °C, shear rate = 40 s^{-1})	26 – 30
Surface tension [mN/m] (25 °C)	30
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 or N_2

Compatible with:



Inkjet

Used abbreviations:

DLS: Dynamic Light Scattering
TEM: Transmission Electron Microscopy