



Xerox® Silver Nanoparticle Ink for Piezo Inkjet Printing



Xerox® Silver Nanoparticle Ink for piezo inkjet printing is based on proprietary silver nanoparticle technology invented and produced at the Xerox Research Centre of Canada. Manufacturing of the nanoparticles and ink yield consistent lot-to-lot reproducible material, allowing for the production of printed electronic and IoT devices..

PRODUCT FEATURES

- Hydrocarbon-based ink
- Compatible with a variety of substrates: PEN, PET, PI, PC, PC-ABS blend, glass
- Excellent printhead latency (> 24 h)
- Low annealing temperature (80 – 130°C) enabled by small and uniform silver nanoparticles (8 nm ± 2 nm)
- Resistivity up to 3x bulk silver
- Compatible with Xerox® UV Curable Dielectric (xdi-UV1-C/T)

PRODUCT PROPERTIES

Ink Vehicle	Hydrocarbon
Silver Content	40 – 45 wt%
Particle Size Z_{ave}	< 20 nm
Shear Viscosity (25°C, 40 – 400 s ⁻¹)	4 – 7 cP-s
Surface Tension	25 – 33 mN/m
Annealing Conditions:	
Thermal (examples).....	100°C for 1 h, 130°C for 10 min
Photonic.....	NovaCentrix PulseForge® 1300 Xenon™ S-2100

*Conductive traces printed using a Dimatix DMP 2800 printer followed by thermal annealing @ 120°C for 30 min.



MATERIAL PERFORMANCE (POST ANNEALING)*

Line Thickness.....	60 – 200 nm
Line Width.....	60 – 120 µm
Volume Resistivity	3 – 6x bulk Ag
Conductivity:.....	> 9 x 10 ⁴ S·cm ⁻¹

SAFETY AND HANDLING

Safety and handling information is available in the product Safety Data Sheet (SDS).

RELATED XEROX® PRODUCTS

Silver Nanoparticle Inks:	
Pneumatic Aerosol Jet®	xcm-nsPA1
Ultrasonic Aerosol Jet®	xcm-nsUA1
UV Curable Dielectric:.....	xdi-UV1-C/T

XEROX RESEARCH CENTRE OF CANADA

With more than 40 years of delivering innovative materials options for Xerox, we have a proven track record for taking concepts from the lab to commercial viability.

Leveraging our broad expertise in materials research, development and engineering, along with our state-of-the-art facilities, we can help you navigate the technical challenges of bringing your product to the market.

ENGAGE US

electronic.materials@xerox.com

Xerox Research Centre of Canada
2660 Speakman Drive
Mississauga, Ontario
Canada L5K 2L1

(905) 823-7091 ext. 3350