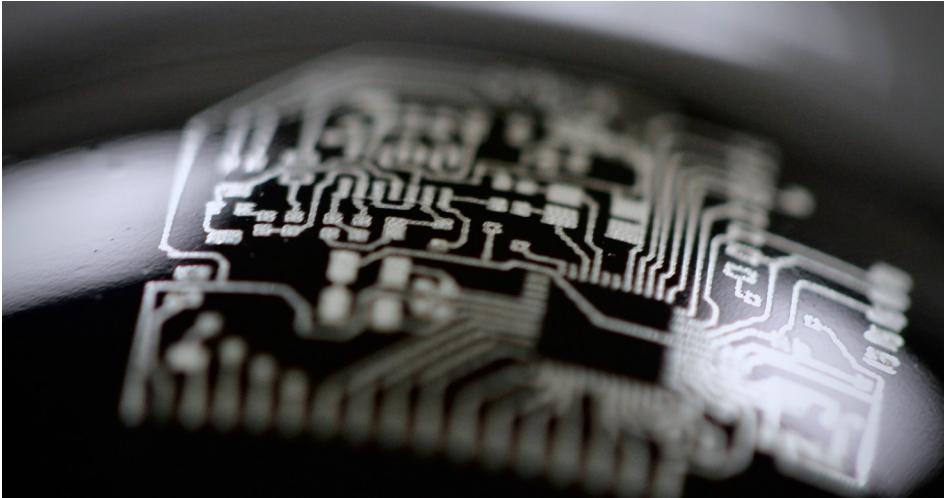




Xerox® Silver Nanoparticle Ink for Pneumatic Aerosol Jet® Printing



Xerox® Silver Nanoparticle Ink for Pneumatic Aerosol Jet® 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
- Low annealing temperature (120 – 130°C) enabled by small and uniform primary 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	60 – 67 wt%
Particle Size, Z _{ave}	< 20 nm
Shear Viscosity (25°C, 40 – 400 s ⁻¹).....	8 – 15 cP-s
Surface Tension	24 – 31 mN/m
Thermal Annealing	120°C, < 1 h

*Conductive traces printed using an Optomec Sprint system were achieved using the following conditions: 0.3 mm round nozzle at 10 mm/s, 630 sccm sheath gas (N₂), 620 sccm push gas (N₂).

MATERIAL PERFORMANCE (POST ANNEALING)*

Line Thickness.....	1 – 7 µm
Line Width.....	0.5 mm
Volume Resistivity	~3.5 – 4.5x 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:	
Piezo Inkjet.....	xcm-nsIJ1
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

