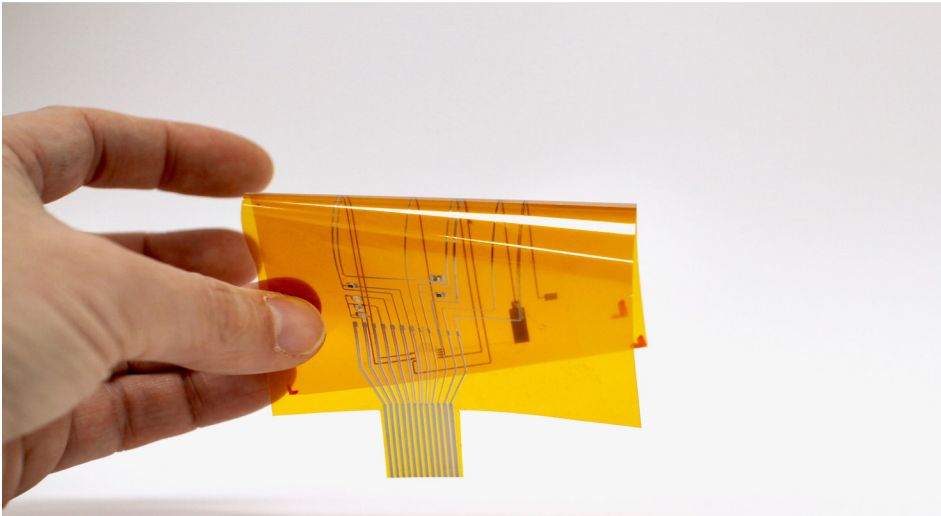


# Xerox® Silver Nanoparticle Ink for Ultrasonic Aerosol Jet® Printing



Xerox® Silver Nanoparticle Ink for Ultrasonic Aerosol Jet® printing is based on proprietary silver nanoparticle technology invented 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 .....	50 – 55 wt%
Particle Size, Z <sub>ave</sub> .....	< 20 nm
Shear Viscosity (25°C, 40 – 400 s <sup>-1</sup> ) .....	3 – 5 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 nozzle, at 10 mm/s print speed, 50 sccm sheath gas, 50 sccm push gas (N<sub>2</sub>).

## MATERIAL PERFORMANCE (POST ANNEALING)\*

Line Thickness.....	1 µm
Line Width.....	0.5 mm
Volume Resistivity .....	~3.5 – 4.5x bulk Ag
Conductivity.....	> 9 x 10 <sup>4</sup> S·cm <sup>-1</sup>

## 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
Pneumatic Aerosol Jet®.....	xcm-nsPA1
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

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