

## Metalon® PFI-A604PO Conductive Silver Flexographic Ink

### Product Description

PFI-A604PO is a water-based, silver nanoparticle flexographic ink which is specifically designed for treated polyolefin (e.g. polyethylene, polypropylene, and cyclic olefin polymers) surfaces. It may also be printed on label paper and other types of plastic. This fast-curing ink produces cured films with high electrical conductivity, good scratch and abrasion resistance, low surface roughness, and excellent adhesion. PFI-A604PO may be used in antenna, RFID, and sensor applications.

### Key Benefits

- Fast curing at low temperatures enables roll-to-roll processing
- High electrical conductivity at thin cured film thicknesses for materials cost savings
- Good printability with features as small as 30 µm achievable
- Excellent adhesion on treated polyolefin, treated polyester, polyimide, polycarbonate, and polyurethane
- Good flexibility and crease resistance
- Good scratch and abrasion resistance
- Good water and alcohol resistance
- Minimal volatile organic compounds (VOCs)
- Easy clean-up with a solution of particle-free detergent and water

### Typical Ink Properties

Silver content (wt. %)	60 (± 2)
Density (wet)	2.1 - 2.3 g / mL
Viscosity @ 10 s <sup>-1</sup>	1000 - 1700 cP
Viscosity @ 1000 s <sup>-1</sup>	200 - 400 cP
pH	5.88 to 5.94
Volume resistivity <sup>1</sup>	4.5 to 5.0 µΩcm
Sheet resistance at 1 mil <sup>1</sup>	1.8 to 2.0 mΩ / square
Printed sheet resistance	50 to 250 mΩ / square (anilox-dependent)
Wet ink coverage per kg	90 to 1000 m <sup>2</sup> (for 13.5 to 1.2 BCM)
Shelf life with refrigeration	> 8 months (unopened container)

<sup>1</sup>The theoretical wet ink thickness for all prints was 51 µm. All prints were cured in a convection oven at 140°C (except on polycarbonate).

### Some recommended Flexographic Print Plates / Cliches for different applications

- Miraclon's Kodak Flexcel NXH
- Dupont™ Cyrel® DfQ
- Dupont™ Cyrel® DPR
- Dupont™ Cyrel® Esko Pixel+
- Asahi Kasei's AFP™-TOP



## Metalon® Conductive Inks for Printed Electronics

[www.novacentrix.com](http://www.novacentrix.com)

### Metalon® PFI-A60PO Conductive Silver Flexographic Ink

#### Some recommended On-press Curing Tools

- PulseForge® tools (<https://pulseforge.com/>)
- Near-IR (infrared) heaters
- Forced-air drying ovens

#### General On-press Requirements to achieve consistent printing and Clean-up Solution Composition

- On-press ink pH adjustment
- Applied “spot” humidification between anilox and print plate cylinder
- Clean-up solution is 1 part per volume of a particle-free detergent and 19 to 20 parts per volume of deionized water

For more information about this ink, please contact us at [info@novacentrix.com](mailto:info@novacentrix.com)