

Metalon® Conductive Inks for Printed Electronics

www.novacentrix.com

Metalon® PFI-722 Conductive Silver Flexographic Ink

Product Description

PFI-722 is a water-based, silver nanoparticle flexographic ink which is designed to produce cured features with high electrical conductivity on a wide range of plastics and papers at print speeds > 45 m / min. This fast-curing ink has also been specifically formulated to produce cured films with good flexibility and crease resistance, good adhesion, and low surface roughness. PFI-722 may be used in sensor, pharmaceutical packaging, flexible solar cell, antenna, and RFID applications.

Key Benefits

- Fast curing at low temperatures enables roll-to-roll processing
- Suitable for print speeds > 45 m / min
- High electrical conductivity at thin cured film thicknesses for materials cost savings
- Good adhesion on treated polyester, polyimide, polycarbonate, and polyurethane
- Good flexibility and crease 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 ⁻¹	300 - 800 cP
Viscosity @ 1000 s ⁻¹	50 - 200 cP
pH	5.88 to 5.94
Volume resistivity ¹	4.5 to 5.0 μΩcm
Sheet resistance at 1 mil ¹	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 ² (for 13.5 to 1.2 BCM)
Shelf life with refrigeration	> 8 months (unopened container)

¹The 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



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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