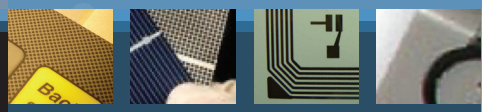


METHODE ELECTRONICS

Nano-Silver and Nano-Carbon Inks

Digital Printable Nano-Ink Technology
Inks formulated for Critical Electronic Applications

METHODE ELECTRONICS, INC.
METHODE DEVELOPMENT COMPANY

Methode Electronics is a global manufacturer that specializes in offering innovative solutions to operate according to the demanding requirements and environments of our customers.

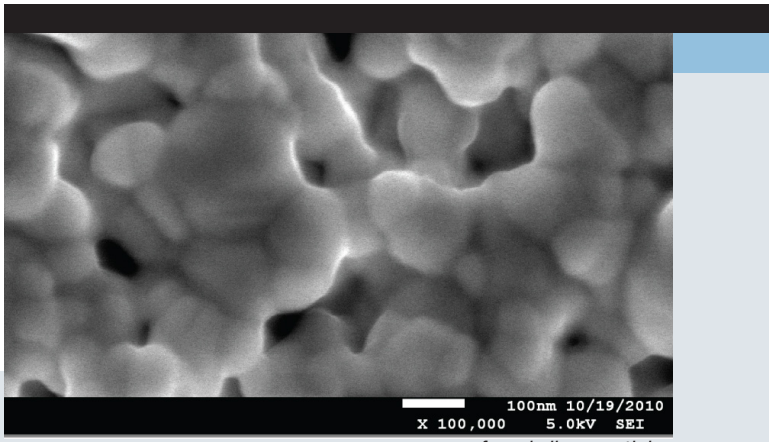
METHODE ELECTRONICS, INC.

For over 40 years, Methode Development (MDC) has been an industry leader in the design, development and application of conductive and resistive inks. Our expertise with electronic inks enables us to provide advanced technology solutions to our customers for high volume applications.

Inkjet SILVER ink

Based on our experience in the field of screen printable inks it was a natural product progression to develop inks capable of being digitally printed via high speed equipment that can enable the proliferation of products for fully functional printed devices. Utilizing advancements in nano technology, our aqueous based Nano-Silver Inks offer the ultimate process for producing conductors since we have eliminated the time consuming and capital intensive thermal curing and/or secondary processing that have been traditionally needed to sinter the silver to form the conductor.

Our Inkjet SILVER ink is sintered at ambient temperature immediately after contacting the substrate.



fused silver particles

Key Features:

Functional Electronics at Graphics Printing Speeds:
Our water based Nano inks can be applied via thermal or piezo inkjet printers.

Excellent Conductivity–Inkjet Silver:
Bulk Resistance is 6 times Silver.

Resistor Values–Inkjet Carbon:
Various resistor values are achieveable.

ROHS Compliance
These inks are water based so they meet the demanding RoHS compliance requirements.

Variable Data Capable:
Unlike screen printed circuits that are limited to the repetition of the same image, digitally printed electronics offer mass customization at extremely high-speed throughput.

No Tooling Required:
Fast and easy transition of designs from concept to prototype to production.

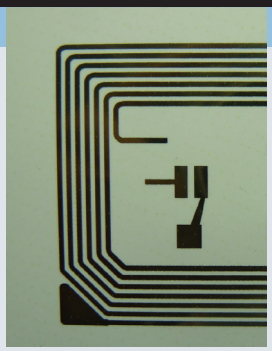
PRINTED ELECTRONICS—

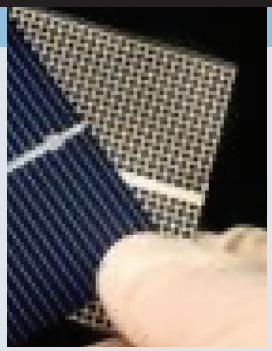
Electronic Functionality at Graphics Speeds

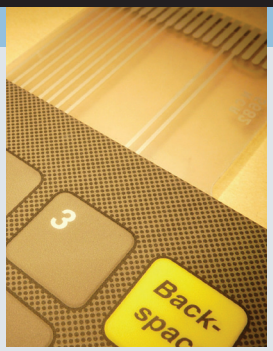
Printed electronics refer to printing semiconducting organic polymers or conductive ink on paper, plastic or textile to create electronically functional devices. Printed electronics are a rapidly emerging technology enabling applications previously not available with traditional manufacturing methods. ***They can replace many established products and provide better functionality and performance at a lower cost*** *through extreme optimization of throughput.*

Inkjet CARBON ink

Recognizing the need for lower cost conductors and complementary resistor systems, we developed a series of Nano Carbon Inks. The inks offer the ability to create variable resistance circuits. Used in applications where higher resistances are required, Methode's carbon inks provide tremendous cost advantages. When used in conjunction with Methode's Nano-Silver inks, conductor/resistor networks can be printed on numerous low temperature substrates. For example, highly sensitive devices can easily be manufactured with these higher resistance inks for the cost competitive disposable sensor market.







Applications:

Security -Variable Data:
Tracking, Sequential Serialization, Identification, Anti-counterfeiting

RFID (HF, UHF & Sonar):
Passports, Asset Tracking, National Identification Cards, Smart cards

Photovoltaics:
Collector Grids

Electrical Circuits:
Flex Circuits, Membrane Switches, Keypads

Sensors:
Consumer products, Disposable Devices, Touch Devices, Medical Diagnostics, Pollution monitoring, Toys

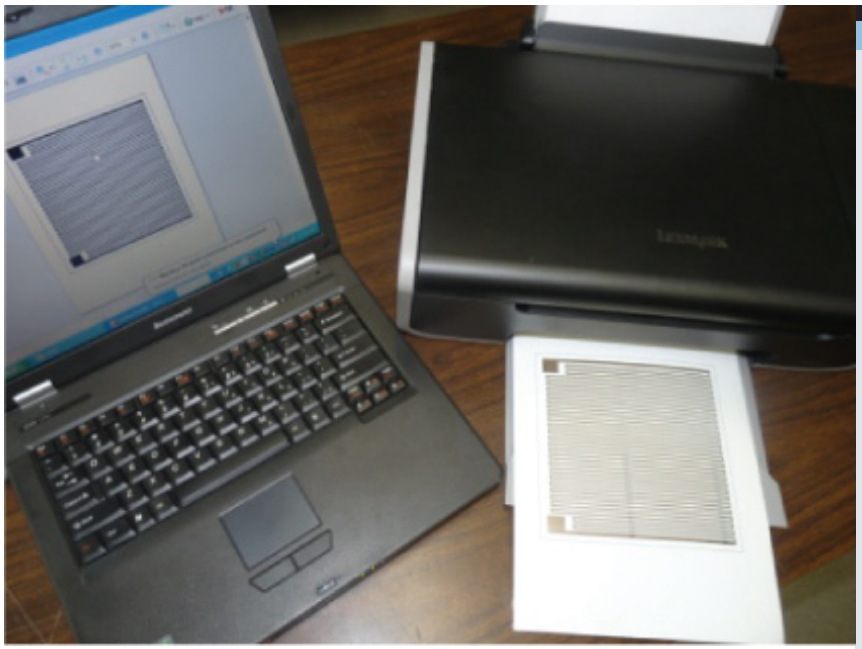
Displays:
Signs, Electroluminescent Lamps, Monitors, Oversize Displays, Disposables

Development Engineers will now be able to more easily design Conductive and Resistive circuits.

METHODE ELECTRONICS

Nano-Silver and Nano-Carbon Inks

Immediately conductive and functional!



Use our Development Kit to immediately print and verify designs. Prototypes can be easily scaled to production equipment.

The development kit allows engineers to create functional electrical circuits with a thermal inkjet desktop printer. The digital inkjet printing method enables circuit pattern and variable data experimentation right at a designer's desk. Simply replace the existing black cartridge on the desktop printer with the 9101 Inkjet Silver cartridge. The desktop print head is the same head used for industrial print systems, allowing a direct path for production scale-up.

Each Kit Contains:

One (1) Desk Top Thermal Ink Jet Printer (8 ½ x 11 sheets)

Two (2) IC9101 Ink Jet Cartridges, each with 10ml of Methode 9101 ink

Two (2) Packs of coated polymer sheets

One (1) Pack of coated premium paper

One (1) Owner's Manual

MSDS Sheets

ABOUT METHODE

Methode Electronics is a leading developer of custom-engineered and application-specific products and solutions utilizing the latest technologies. From biometric identification utilizing the unique characteristics of human skin structure; to magnetic signature sensing of mechanical and electrical properties; to the revolutionary solid-state touch sensitive switches used in today's appliances and automobiles, Methode's extensive toolbox of technical solutions help our customers differentiate their products.

PROVIDING CUSTOMERS WINNING SOLUTIONS

Our regional design and customer support centers, coupled with manufacturing campuses in the Americas, Europe, and Asia allow Methode to bring a total business solution to customers worldwide. We leverage the talents of our employees to serve a diversified group of customers in four market areas: User Interfaces, Sensor and Switches, Power and Data. Methode helps customers win in their end markets by providing an unmatched combination of customer focus, differentiated technology, problem solving and world-class manufacturing.

METHODE DEVELOPMENT COMPANY

7401 West Wilson Avenue, Chicago, Illinois 60706
Web: **www.methode.com/inks** Email: **infomdc@methode.com** Phone: **877-316-7700**