

## Smart Jet I (S-CS01520)

*Smart Jet I (S-CS01520) Conductive Ink* is dedicated to the printed electronics market and is particularly well suited for applications requiring **high conductivity** and **high resolution**. This ink, based on silver nanoparticles, is perfectly suited to design conductive traces on flexible substrates. It is also recommended for IoT applications including antennas (HF, UHF) and sensors, OPV and OLED grids, electrodes, touchscreen bezel busbars.

### Processing: Ink Jet

#### Ready-to-Use Ink

Material	Silver nano-particles
Particles content	20 ± 1 wt%
Solvent type	Alcane/Alcohol mix
Viscosity (20°C)	12 ± 3 mPa.s
Surface tension	24 ± 3 mN/m
Density	1,1 g/cm <sup>3</sup>
Storage stability	3 months (0-5°C)



*Smart Jet I printed sample*

#### Key advantages & benefits

- Improved conductivity
- Superior resolution (increased with substrate surface treatment)
- Good bending resistance, smooth surface
- Shiny coating, Mirror effect
- Optimized nano-particles content
- Curing process compatibility: photonic, NIR, low vacuum oven, thermal curing.
- Cleaning solution : C-FS21511
- Non-Toxic (No CMR ink)

#### Sintering Conditions

Curing process	Curing conditions	Resistivity	Nb silver bulk
Tunnel furnace	150°C/5mn	6,6 μΩ.cm	4,1
Tunnel furnace	180°C/5mn	5.8 μΩ.cm	3,6
Tunnel furnace	200°C/5mn	5,4 μΩ.cm	3,4
NIR	Few seconds	6 – 12 μΩ.cm	3,8 – 7,5
Photonic curing	<100 ms	5 – 10 μΩ.cm	3,2 – 6.3

#### Qualified Substrates (5B - ASTM D3359)

- PET : Melinex 406, Melinex 339, Melinex 520, Arcophane TCA, Arcophane STS, Folex BG-71
- PEN : Teonex
- KAPTON<sup>®</sup>
- Ceramic

#### Recommended surface treatment:

- Temperature stabilization
- Argon plasma

Use **ProtectInk S (P-ID21001)** as a protective layer for Smart Jet I

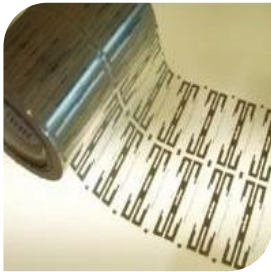
## Typical printing performances

Specific resistance	6 $\mu\Omega$ .cm
Sheet resistance	2.4 m $\Omega$ /□/mil
Resolution	40 $\mu$ m
Thickness	190 nm
Sintering Conditions	5 min at 150°C
Adhesion on PET	5B (ASTM D3359)
Bending radius	2 mm

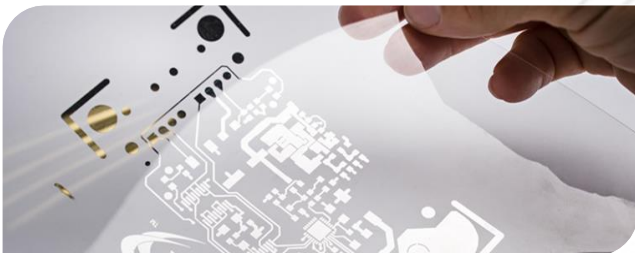
\* Printing conditions : KM512SHx / 723 dpi / 1-Drop line

## Applications

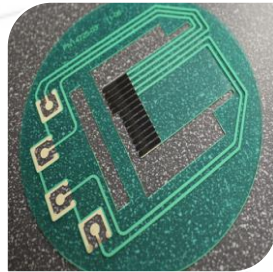
### RFID & NFC tags



### Display bezel



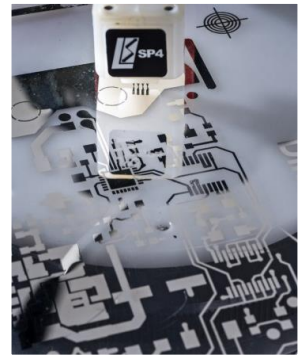
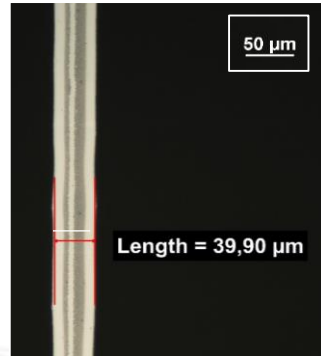
### Flexible PCBs IoT



### Metal mesh, grids

## Qualified Printhead

- RICOH:
  - MH5420
- KONIKA MINOLTA:
  - KM512SHx,
  - KM1024iMHE,
  - KM1024LHB.
- XAAR:
  - 1003 GS6,
  - 128
- FUJIFILM:
  - Dimatix DMP series cartridge



## Printing guidelines

- Smart Jet I S-CS01520 Conductive Ink is warmed at room temperature (about 10mn) and left for 5 minutes in an ultrasonic bath in order to get rid of any aggregates
- Clean-up solution: Clean Ink (C-FS21511)
- Filtration on a 0,45  $\mu$ m PTFE filter syringe to avoid nozzles clogging

## Shipping & Packaging

- Standard sample order is 100 mL
- Standard bulk order is 1 L
- Standard delivery time is 10 days

For more information on our conductive inks, please contact:



39, Avenue Gaston Imbert - 13790 Rousset  
FRANCE

Tel : +33 (0)4 42 37 05 80

Fax : +33 (0)4 42 20 07 03

[contact@genesink.com](mailto:contact@genesink.com)

<http://www.genesink.com>

### Limited Warranty

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