

# Product Data Sheet



## Smart Spray I (S-CS11520)

Smart Spray I (S-CS11520) Conductive Ink was developed for the printed electronics market and is particularly well suited for applications requiring high conductivity.

Smart Spray I (S-CS11520) Conductive Ink shows great performance on spray printer.

### Processing: Spray Coating

#### 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)      |

#### 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)

#### Printing guidelines

- Smart Spray I S-CS11520 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 µm PTFE filter syringe to avoid nozzles clogging

#### 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> Recommended surface treatment:
  - Temperature stabilization
  - Argon plasma
- Ceramic Use **ProtectInk S** (P-ID21001) as a protective layer for Smart Jet I

#### Shipping & Packaging

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

#### Limited Warranty

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