Product Data Sheet

SMARTINK

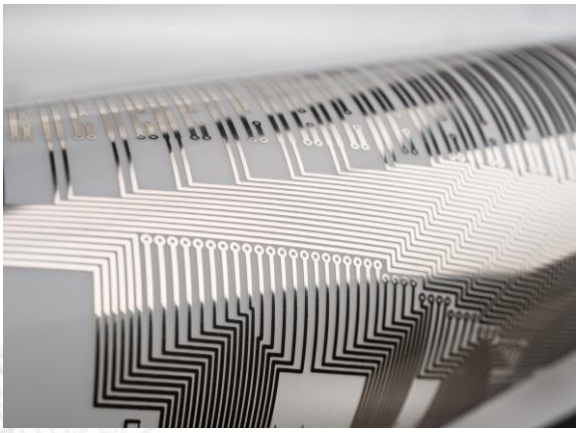
GENESINK
SMALLER, FURTHER, FASTER

Smart Screen F (S-CS21303)

Smart Screen F (S-CS21303) Conductive Ink was developed for the printed electronics market and is particularly well suited for applications requiring **high conductivity** and **high resolution at very low curing temperatures**. This ink, based on silver nano-particles, is perfectly adapted to design conductive tracks on flexible substrates and is suitable to produce antennas for IoT applications.
Process: Flatbed screen printing (down to 80 µm of resolution)
For printing lines below 80 µm, use Smart Screen R (S-CS21306)

Ready-to-Use Ink

Material	Silver nano-particles
Particles content	55 ± 5 wt%
Solvent type	Alcohol/Glycol mix
Viscosity (20°C)	5,000 - 7,000 mPa.s @40s^{-1} 4,000 - 5,000 mPa.s @100s^{-1}
Density	2 g/cm^3
Storage stability	6 months at 18-25 °C



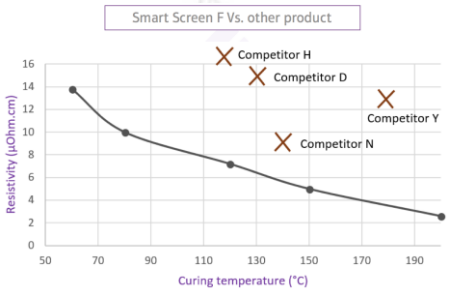
Smart Screen F printed sample

Printing guidelines

Type	Mesh Thickness	Mesh count	Mesh Angle	Emulsion Thickness	Resolution	Theoretical coverage (m^2/kg)	Theoretical dried thickness
Inox	49 µm	325 /inch – 130 /cm	45°	5 µm	100 µm	39	2 µm
Inox	40 µm	400 /inch – 160 /cm	45°	5 µm	80 µm	71	1 µm
Polyester	30 µm	380 /inch – 150 /cm	22.5°	10µm	80 µm	50	1.6 µm
Polyester	34 µm	420 /inch – 165 /cm	22.5°	Capilex CP MacDemid	80 µm	90	1 µm

Sintering Conditions

Curing process	Curing conditions	Resistivity	Nb Silver bulk
Tunnel furnace	60°C/5mn	13.8 µΩ.cm	8.6
Tunnel furnace	80°C/5mn	10 µΩ.cm	6.25
Tunnel furnace	120°C/5mn	7.5 µΩ.cm	4.7
Tunnel furnace	150°C/5mn	5 µΩ.cm	3.1
Tunnel furnace	200°C/5mn	2,6 µΩ.cm	1.6
NIR	Few seconds	4 – 10 µΩ.cm	2.5 to 6.25
Photonic curing	<100ms	3 – 10 µΩ.cm	1.9 to 6.25



Key advantages & benefits

- Superior adhesion (5B)
- Cost reduced by a factor 2
- Good bending resistance, smooth surface
- Superior conductivity
- High resolution
- Curing process compatibility: photonic, NIR, low vacuum oven, thermal curing
- High nano-particles content
- Non-Toxic (No CMR ink)
- Long shelf-life

Qualified Substrates *(5B - ASTM D3359)*

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

Recommended surface treatment:

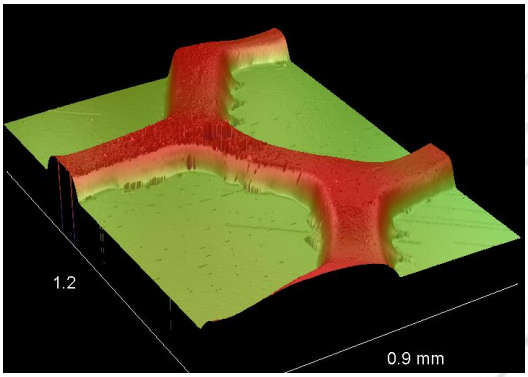
- *Temperature stabilization*
- *Argon plasma*

*Use **ProtectInk S** (P-ID21001) as a protective layer for the ink Smart Screen F*

Typical printing performances

Specific resitance	5 µΩ.cm
Sheet resistance	25 mΩ/□
Resolution	80 µm
Thickness	2 µm
Sintering Conditions	5 min at 150°C
Adhesion on PET	5B (ASTM D3359)
Bending radius	2 mm

**** Mesh used: Polyester / 150mesh/cm / Ø 30 µm***



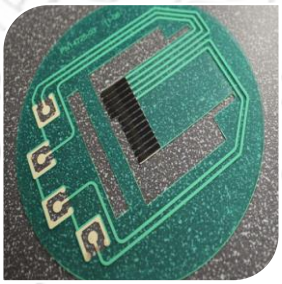
Smart Screen F 3D profilometry

Applications

RFID & NFC tag

OLED & OPV grid

Flexible PCBs



Flexible printed cables

Shipping & Packaging

- Standard sample order is 100 g
- Standard bulk order is 1 kg
- Standard delivery time is 10 days

For more information on our conductive inks, please contact:

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