

Product Description

Dycotec DM-SIP-3102S is a nanosilver based screen printable paste that is used for fine line print resolution (<50 µm) in applications such as solar cell, display and sensors. The paste is compatible with PET and glass substrates.

Product Benefits

- Low temperature sintering temperature
- Fine line print resolution
- Excellent electrical conductivity

Paste Preparation

DM-SIP-3102S is a thermoplastic nanosilver based paste system. The paste should be gently stirred before use avoiding incorporation of air bubbles. Any paste removed from its container should be used within 30 minutes to ensure consistent deposition. After 30 minutes, quality cannot be guaranteed. Once the paste has been removed from the container for printing, this may introduce contamination. Please do not replace the paste in the container.

Properties of Uncured Paste

Test	Properties
Viscosity after mixing (Pa.s) (Cone and plate 50s ⁻¹ , 20°C)	13 - 18
Thinner	For slight adjustments in viscosity, use DM-SIP-3102-DT
Coverage	180-240 cm ² /g
Solids Content	65 - 70 %
Density	2.6 g/cm ³

Paste Processing Conditions

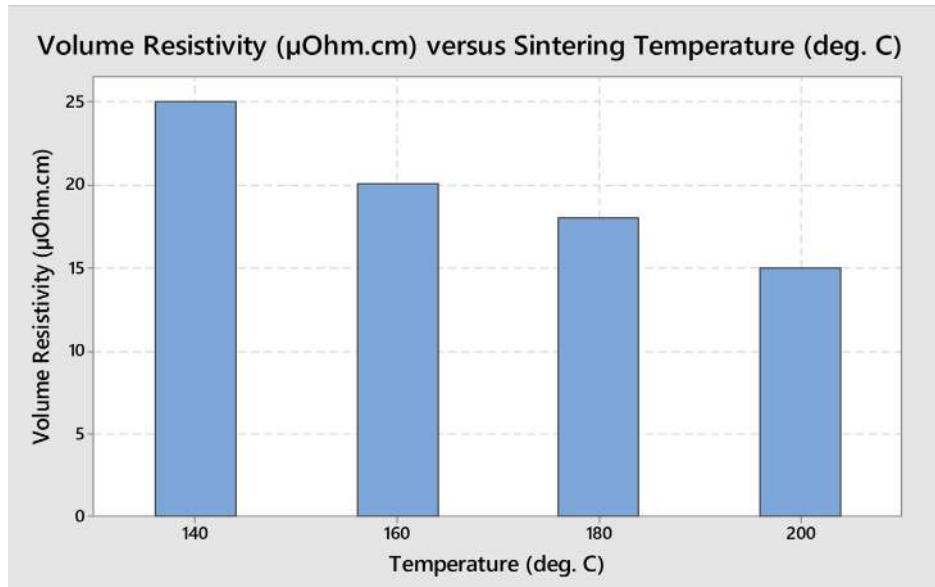
Parameter	Typical Properties
Printer Type	Flat bed screen printing for manual or automatic use
Substrate	PET, glass
Screen Residence Time	>30 mins
Print Method	Print-Flood
Screen	420 polyester, 20 µm emulsion
Flood speed	30-70 mm/s
Print speed	30-70 mm/s
Squeegee type	80A Shore

To avoid premature solvent evaporation and lower risks of screen blockage the paste should be print-flood processed.

The paste can be dried using either a convection oven or using IR heating. Typical drying parameters used are 140°C for 20 mins. For improved electrical conductivity, drying temperatures up to 200°C may be used. Drying times may be reduced to achieve the optimum resistivity depending on manufacturing process set-up. Typical print thickness after drying is 2-3 µm.

Properties of Cured Paste

Test	Typical Properties
Sheet Resistance	<7 mΩ/□/mil on glass at 180°C
Volume Resistivity	<18 μΩ.cm on glass at 180°C
Adhesion	5B
Resolution (L/S)	<50 μm depending on print deposition set-up



Clean-Up

Equipment can be cleaned using alcohols such as iso-propanol and acetone.

Storage and shelf-life

Containers should be stored in a cool dry place with lids tightly sealed. Avoid introduction of water into the paste. Dycotec Materials cannot assume responsibility for a paste that has not been stored in appropriate conditions or where the pastes have been contaminated following use.

Safety and Handling

For safe use of this product, please review relevant material safety and datasheet (MSDS).

For more information, please contact:

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All information reported in the datasheet is for experimental work undertaken in our laboratories and illustrates typical values only. Processing conditions may vary depending on customers' experience and their application requirements and manufacturing process equipment set-up.

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