

## Product Description

Dycotec DM-SIP-3100S is a nanosilver based syringe printable paste that is used for thin film PV, sensors and general printed electronics applications. The paste is compatible with glass and transparent conductive coated glass substrates.

## Product Benefits

- High coverage
- Low temperature sintering temperature
- Excellent adhesion
- Excellent electrical conductivity
- Deposition using syringe

## Paste Preparation

DM-SIP-3100S 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 6 hours to ensure consistent deposition. The paste should be manually transferred to a syringe and degassed prior to use. The paste should be kept agitated prior to use if not used within 24 hours to prevent particle settlement. After 6 hours 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 <sup>-1</sup> , 20°C)	2-4
Thinner	For slight adjustments in viscosity, use DM-SIP-3100-DT
Coverage	290 cm <sup>2</sup> /g
Solids Content	56 - 62 %

## Paste Processing Conditions

Parameter	Typical Properties
Substrate	TCO-coated glass, glass
Deposition Method	Syringe

The paste can be dried using either a convection oven or using IR heating. Typical drying parameters used are 130-140°C for 20 mins. Drying times may be reduced to achieve the optimum resistivity depending on manufacturing process set-up.

## Properties of Cured Paste

Test	Typical Properties
Sheet Resistance	<8 mΩ/□/mil at 140°C, <5 mΩ/□/mil at 200°C
Volume Resistivity	<20 μΩ.cm at 140°C, <12.5 μΩ.cm at 200°C
Adhesion	5B
Resolution (L/S)	<250 μm depending on print deposition set-up

## Clean-Up

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

## Storage and shelf-life

Containers should be stored in a cool location at a storage temperature between 10-25°C with lids tightly sealed. The paste shelf-life for an unopened container is 6 months from date of shipment. Please ensure the material has time to reach room temperature before use. 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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