

Product Description

Dycotec DM-SIP-3105S is a nanosilver based low viscosity syringe printable ink that is used for thin film PV, sensors and general printed electronics applications. The ink 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-3105S is a thermoplastic nanosilver based ink system. The ink should be gently stirred before use avoiding incorporation of air bubbles.

Properties of Uncured Paste

Test	Properties
Viscosity after mixing (mPa.s) (Cone and plate 500s ⁻¹ , 20°C)	500-600
Thinner	For slight adjustments in viscosity, use DM-SIP-3105-DT
Density	1.7 g/cm ³
Solids Content	46 - 54 %

Paste Processing Conditions

Parameter	Typical Properties
Substrate	TCO-coated glass, glass, PET
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. Maximum drying temperature is 200°C.

Properties of Cured Paste

Test	Typical Properties
Sheet Resistance	<8 m Ω /□/ mil at 140°C, <5 m Ω /□/ mil at 200°C
Volume Resistivity	<20 $\mu\Omega$.cm at 140°C, <12.5 $\mu\Omega$.cm at 200°C
Adhesion (ASTM 3359)	5B
Hardness (ASTM 3363)	H
Resolution (L/S)	<250 μ m depending on print deposition set-up
Damp Heat Test (85°C/85%RH)	No increase in resistance

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).

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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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