

## Product Description

Dycotec DM-SNW-8010S is a transparent conductive screen silver nanowire printable paste that is used for thin film PV, display, sensors and general printed electronics applications. The paste is compatible with glass and plastic substrates such as PET and polycarbonate.

## Product Benefits

- Water based viscous liquid for creating high optical quality transparent conductive layers
- Compatible with a range of substrates including PET, PC and glass
- Excellent electrical conductivity ( $<100 \Omega/\square$ ) at transparency  $>92\%$  (measured at 550nm)
- Screen printable enabling reduced loss compared to spraying
- Compatible with Dycotec transparent screen printable overcoat layers (DM-OC-6011S)

## Paste Preparation

DM-SNW-8010S is an aqueous based thermoplastic screen printable paste. The paste should be gently stirred before use avoiding incorporation of air bubbles. Any paste removed from its container should be used within 15 minutes to ensure consistent deposition. 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)	1-3
Appearance	grey
Solids Content	2 - 5 %
Density	1.1 g/cm <sup>3</sup>

## Paste Processing Conditions

Parameter	Typical Properties
Substrate	PET, PC, glass
Deposition Method	Screen or blade coated
Screen	305 polyester mesh/21 $\mu\text{m}$ emulsion
Squeegee	80A
Print speed	70 mm/s

Pour enough ink on the screen to last approximately 15 minutes of printing at a time. Adding more will cause excess solvent evaporation on the screen, affecting the coating thickness as well as the transparency. Printed films can be dried using either a convection oven or using IR heating. Typical drying parameters used are 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	<100Ω/□
Transparency	>92% at 550 nm
Haze	<3%
Coverage	~1250 cm <sup>2</sup> /g

It is recommended to use this product in conjunction with DM-OC-6011S as an transparent overcoat to provide mechanical protection during application use. The overcoat will also enhance film adhesion.

## Clean-Up

Equipment can be cleaned using water and then alcohols such as iso-propanol to dry.

## Storage and shelf-life

Containers should be stored in a fridge at 4°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. 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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