

## Product Description

DM-SNW-8012S is a transparent conductive screen printable paste that is a replacement for sputtered ITO films. Typical applications include;

- Thin film PV
- Display
- Capacitive touch sensors and pads
- Electroluminescent lamps

The paste is compatible with PET, glass and polycarbonate substrates. DM-SNW-8012S is based on silver nanowire technology.

## Product Benefits

- Water based ink for creating high optical quality transparent conductive layers
- Compatible with PET, glass and polycarbonate
- Excellent electrical conductivity ( $<50 \Omega/\square$ ) at transparency  $>97\%$  (measured at 550nm)
- Screen printable enabling reduced material loss compared to spraying and safer operation
- Compatible with Dycotec transparent screen printable overcoat layers (DM-OC-6031S)

## Paste Preparation

DM-SNW-8012S is an aqueous based thermoplastic screen printable paste. The paste should be gently stirred before use avoiding incorporation of air bubbles. Once the paste has been added to the screen it should be used within 15 minutes to ensure consistent deposition. After 15 minutes, solvent evaporation will affect coating uniformity and transparency. 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 5s <sup>-1</sup> , 20°C)	0.7-1.5
Appearance	grey
Density	0.94 g/cm <sup>3</sup>
Coverage	1927 cm <sup>2</sup> /g

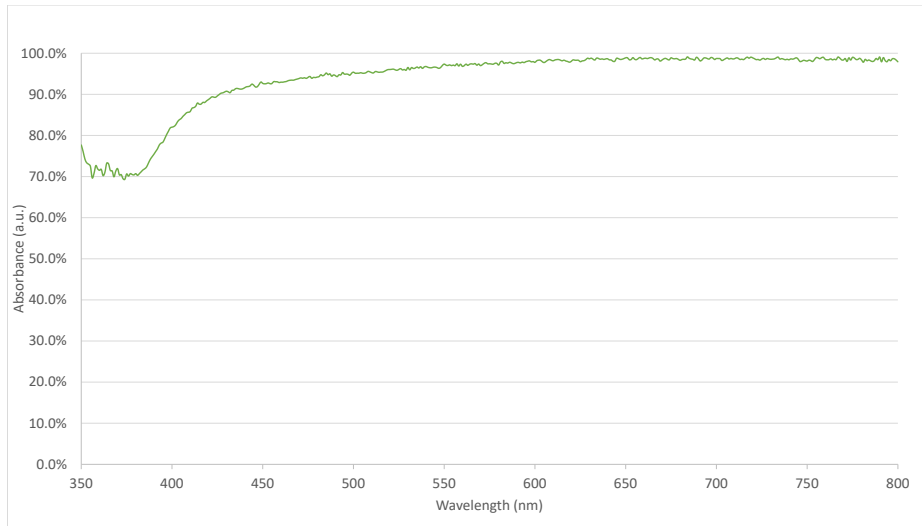
## Paste Processing Conditions

Parameter	Typical Properties
Substrate	PET, glass, polycarbonate
Deposition Method	Screen or blade coated
Screen	P120 polyester mesh/21 µm emulsion
Squeegee Hardness	80A
Print speed	70 mm/s - 400 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 uniform and 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	<50 $\Omega/\square$
Transparency	>97% at 550 nm
Haze	<2%
Durability (85oC/85% Relative Humidity)	1000 hours (used with DM-OC-6031S overcoat)



## 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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