

## Product Description

Dycotec DM-CAP-2100S is an aqueous screen printable carbon paste that is used in stretchable applications such as wearable devices, sensors and medical devices. The paste can be applied to elastomeric and textile substrates.

## Product Benefits

- Aqueous, environmentally friendly system
- Stretchable and compatible with a wide variety of substrates
- Compatible with Dycotec Materials stretchable encapsulation pastes DM-ENC-2500 and DM-INS-2501
- Excellent electrical conductivity ( $<20 \Omega/\square/\mu\text{m}$ )

## Paste Preparation

DM-CAP-2100S is a single part paste system. The paste should be gently stirred before use avoiding incorporation of air bubbles. 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 & plate, 50s <sup>-1</sup> , 20°C)	5-10
Screen residence time	>30 mins*
Thinner	For slight adjustments in viscosity use DM-CAP-2100S-DT
Coverage	105 cm <sup>2</sup> /g at 10 μm print thickness
Solids Content	38-42 % (vacuum oven, 80°C, 30 min)
Density	~1.08 g/cm <sup>3</sup>

\* DM-CAP-2100S is an aqueous based paste. To prevent premature drying and screen blockage, please ensure the printer is kept operational avoiding line stoppage for >30 mins with frequent replenishment of paste on screen.

## Paste Printing Conditions

Parameter	Typical Properties
Substrate	TPU, PET, Transfer paper
Equipment	Flat bed screen printing; manual and automatic
Screen	325 SS, (50/30), 13 μm emulsion
Flood/Print speed	70 mm/s
Squeegee type	80A shore

## Paste Processing Conditions

Parameter	Typical Properties
Typical Thickness	10 μm
Drying Temperature	80-120°C
Drying Time	5-20 mins
Drying method	Convection oven or IR heating

## Properties of Cured Paste

Test	Typical Properties
Sheet Resistance	<20 $\Omega/\square/\mu\text{m}$ (for TPU, PET)
Stretchability	20% elongation
Adhesion	5B
Resolution (L/S)	500 $\mu\text{m}$

## Clean-Up

Cover the mesh using a damp lint free cloth while the paste is being cleaned off to avoid excessive drying of the screen that will cause difficulty to reopen the screen. Finally wipe with soapy water then IPA.

## Storage and shelf-life

For optimum results, the containers should be stored at 10-25°C with lids tightly sealed. The paste shelf-life for an unopened container is 6 months from date of shipment. 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 and safety datasheet (MSDS).

For more information, please contact:

Dycotec Materials Ltd  
Unit 6, Stainer Road  
Porte Marsh Industrial Estate  
Calne, Wiltshire, SN119PX UK  
Email: [Info@dycotecmaterials.com](mailto:Info@dycotecmaterials.com)  
Tel: +44 (0)1793 422598  
[www.dycotecmaterials.com](http://www.dycotecmaterials.com)

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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