DM-CAP-4411S

DYCOTEC MATERIALS

Product Description

DM-CAP-4411S is a single part screen printable carbon paste for for printed biosensor manufacture. The paste provides a high sensitivity screen-printed electrode (SPE). Applications include electrochemical biosensors such as enzymatic/DNA sensors and immunosensors.

Product Benefits

- Excellent electrial conductivity
- For use on flexible substrates such as PET
- Suitable for use across a broad range of biosensor applications

Paste Preparation

The paste is a single part system. Gently stir before use. Avoid rapid stirring to prevent air entrapment during the stirring process. Once the paste has been removed from the container for printing, this may introduce contamination. Please do not put used paste back into the original container.

Properties of Uncured Paste

Test	Properties
Viscosity (Malvern, cone-plate $50s^{-1}$, 25°C)	20 - 40 Pa·S
Thinner	This should normally not be required. If necessary, use DM-DIL-0200DT for slight adjustments in viscosity.
Solids Loading	36 - 40 % (130°C, 30 min, convection oven)
Colour	Black

Paste Processing Conditions

Parameter	Typical Properties
Substrate	PET
Deposition Method	Manual or semi-automatic flat bed screen printing
Screen	180 mesh count / inch, 45 µm wire diameter
Emulsion	13 µm
Squeegee hardness	80 Durometer Shore A
Print Mode	Flood/Print
Print/Flood Speed	70 mm/s
Squeegee pressure	6 kg over 22cm
Print gap	1.5 mm
Screen residence time	4 hrs
Number of print processes	1 - 2 dependent on application

Guideline curing parameters are 120˚C for 10 mins in a well ventilated convection oven. Drying times should be optimised for different oven types and print thickness.

Properties of Cured Paste

Test	Typical Properties
Sheet Resistance (ASTM D257)	<40 Ω/□/25µm(120°C cure)
Adhesion (ASTM D3359)	5B

Clean-Up

Equipment can be cleaned using alcohols such as IPA.

Storage and shelf-life

Containers should be stored at room temperature (4 – 8˚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 safety datasheet (SDS).

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. More detailed information can be obtained via info@dycotecmaterials.com.

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