# DM-CAP-2101S

DYCOTEC MATERIALS

## Product Description

DM-CAP-2101S is a screen printable carbon paste that is used in stretchable applications such as wearable devices, sensors, heaters and medical devices. The paste enables stretchability >200% and has a sheet resistance of ~60 Ω/□/25µm.

## Product Benefits

- Low temperature curing temperature (130˚C)
- Stretchable >200% and compatible with a wide variety of substrates
- Good electrical conductivity (60 Ω/□/25µm)
- Compatible with Dycotec Materials stretchable encapsulation pastes

## Paste Preparation

DM-CAP-2101S is a thermoplastic carbon paste system. Once the paste has been removed from the container for printing, this may introduce contamination. Please do not replace the paste in the container. The paste should be gently stirred before use avoiding incorporation of air bubbles.

## Properties of the Uncured Paste

| Test | Properties |
|---|---|
| Viscosity after mixing (Pa.s)<br>(Cone and plate $50s^{-1}$, 20ºC) | 5 - 10 |
| Thinner | For slight adjustments in viscosity, use DM-CAP-2101S-DT |
| Deposition | Flat-bed screen printing: manual and automatic |
| Solids Content | 29-34 % |
| Density | 1.1 g/cm$^3$ |

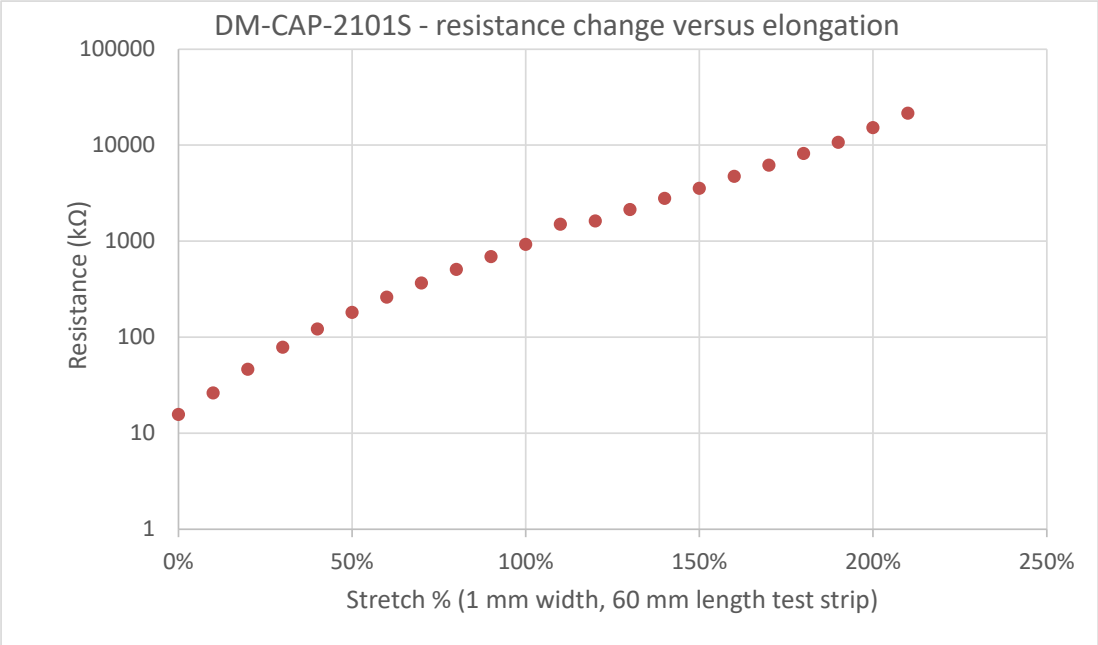
## Paste Processing Conditions

| Parameter | Typical Properties |
|---|---|
| Substrate | Textiles, PET |
| Screen | 180 thread per inch stainless steel, 13 µm emulsion |
| Print speed | 70 mm/s |
| Squeegee type | 80A Shore |
| Area Coverage | 213 cm$^2$/g at 10 µm thickness |

Pastes should be cured in an IR or convection oven. Typical curing parameters used are 130˚C for 20 mins. Curing times may be reduced depending on manufacturing process set-up.

## Properties of the Cured Paste

| Test | Properties |
|---|---|
| Sheet Resistance | 60 Ω/□/25µm (dry at 130˚C) |
| Adhesion | 5B (depending on substrate) |
| Typical Print Thickness | 8-9 µm |
| Stretchability | >200% (design dependent) |




## Encapsulation Layers

Please contact Dycotec Materials regarding suitable stretchable encapsulating layers for your application.

## Clean-Up

Equipment can be cleaned using benzyl alcohol then wipe dry with isopropanol.

## Storage and Shelf-life

For optimum results, the containers should be stored at room temperature 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).

For more information, please contact:

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