

## Product Description

CAP-4010-SP is a 2- part screen printable carbon paste for use in long life, high reliability and resistive contact sensor applications. The resistive paste is designed to withstand in excess of 2M cycles when combined with suitable wiper systems.

## Product Benefits

- Good Printability
- Can be mixed with other products in the CAP-4000-SP range to produce accurately controlled resistance values
- High Abrasion Resistance
- Excellent adhesion
- Good screen residence time

## Paste Preparation

CAP-4010-SP is a 2 part paste system. It requires mixing of the Part B, CAP-4010-SP-B and the Part A, CAP-4010-SP-A in the correct ratios to form the CAP-4010-SP. The contents of one container of the Part B, CAP-4010-SP-B system must be added completely to a pot of CAP-4010-SP-A. The combined pastes should then be mixed slowly. Avoid rapid stirring to prevent air entrapment during the stirring process. As soon as the product is activated, the material should be used immediately. 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) <i>(Lamy, cone and plate 50s<sup>-1</sup>, 20°C)</i>	10-30
Thinner	This should normally not be required. Use CAP-4000-DT for slight adjustments in viscosity and/or replace solvents through evaporation losses.
Coverage	400 cm <sup>2</sup> /g

## Paste Processing Conditions

Parameter	Typical Properties
Substrate	FR4/PCB
Screen	13 µm emulsion, 325 DPI
Flood Speed	30 mm/s
Print Speed	45 mm/s
Squeegee hardness	60A Durometer
Squeegee pressure	2 Kg
Squeegee angle	45°
Cured thickness	~25 µm
Print gap	1.5 mm
Number of strokes	2

Guideline curing parameters are use of belt furnace at 210°C for 35 mins, followed by box oven cured at 200°C for 70 mins.

## Properties of Cured Paste

Test	Typical Properties
Thickness	~18 - 25 $\mu\text{m}$
Sheet Resistance	1000 $\Omega/\square$
Surface Roughness (Ra)	<1 $\mu\text{m}$
Adhesion	5B ASTM D3359
Hardness	9H ASTM D3363; ISO 151843

The material will withstand over 2 M cycles using a suitable wiper system.

## Blending Curve

A specific resistivity can be obtained by blending 2 products in the CAP-4000-SP range. A blending curve is available on request.

## Clean-Up

Equipment can be cleaned using alcohols such as propanol.

## Storage and shelf-life

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. **The material should not be stored at temperatures below 0°C or greater than 30°C.** 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:

**Dycotec Materials Ltd**  
Unit 12, Star West  
Westmead Industrial Estate  
Swindon, Wiltshire 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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