

## Product Description

Dycotec DM-CUP-5056 copper paste is designed for flat-bed screen printing for versatile use in electronic applications. The paste is designed to be rapidly cured using reducing gas atmospheres such as formic acid at temperatures as low as 120°C.

## Product Benefits

- Excellent electrical conductivity (<4 mΩ/□/mil at 200°C)
- Low temperature sintering (120°C)
- Compatibility with a broad range substrates including; PET, polyimide and glass

## Paste Preparation

Gently stir the paste before use to ensure the product is well mixed. Be careful not to introduce air bubbles. Do not replace used ink in the container. This ink is designed for screen printing processes. Once printed, the paste should be dried at 60-80°C for 20 mins.

## Properties of the Uncured Paste

Test	Properties
Solids	77-82%
Viscosity (50 s <sup>-1</sup> , cone & plate)	8-12 Pa.s at 25°C
Thinner	For slight adjustments in viscosity use DM-CUP-5056-DT
Substrate compatibility	Polyimide, PET, glass, metal
Typical Print Thickness	13-15 μm
Coverage	125-155 cm <sup>2</sup> /g at 10 μm print thickness
Density	~3.8 g/cm <sup>3</sup>

## Paste Processing Conditions

Test	Typical Properties
Screen	325 SS mesh, 13 μm emulsion
Squeegee Type	70A Shore
Line/Space (μm)	100/250
Print Speed	30-80 mm/s
Screen Residence Time	>1.5 hrs
Dry Temperature	60-80°C
Dry Time	20 mins
Curing condition	Formic acid at 120-200°C

## Clean-Up

Equipment can be cleaned using ethylene glycol butyl ether then IPA

## Paste Curing Conditions

It is recommended that printed structures should be sintered shortly after drying.

Test	Properties
Sintering Technique Compatibility	Reducing gas atmospheres such as formic acid

## Properties of the Cured Paste

Test	Properties
Adhesion	5B
Volume Resistivity	<30 $\mu\Omega$ .cm (120°C), <16 $\mu\Omega$ .cm (140°C), <10 $\mu\Omega$ .cm (200°C)
Resistivity (m $\Omega$ /□/25 $\mu$ m)	<12 (120°C), <7 (140°C), <4 (200°C)
Hardness	4-5 H on PI/PET

## Storage and Shelf-life

Store at 10-25°C in a cool dry place with lid tightly sealed. Do not freeze. We cannot assume responsibility for an ink that has not been stored in appropriate conditions or where the ink has 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:

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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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