

Product Description

Dycotec DM-CUP-5080 nanocopper paste is designed for manual and automatic flat-bed screen printing for versatile use in electronic applications. The paste is designed to be low temperature cured in reducing gas atmospheres such as formic acid.

Product Benefits

- Excellent electrical conductivity (<5 mΩ/□/25 μm at 200°C)
- Low temperature sintering (120°C)
- Compatibility with a broad range of substrates including PET and polyimide

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 in air at 60-80°C for 20 mins prior to curing.

Properties of the Uncured Paste

Test	Properties
Solids	70-75%
Viscosity (50 s ⁻¹ , cone & plate)	5-10 Pa.s at 25°C
Thinner	For slight adjustments in viscosity use DM-CUP-5080-DT
Substrate compatibility	Polyimide, PET, Glass
Typical Print Thickness	4-5 μm
Coverage	135 cm ² /g at 10 μm

Paste Processing Conditions

Test	Typical Properties
Deposition Process	Manual and automatic flat-bed screen printing
Screen	325 SS mesh, 13 μm emulsion
Squeegee	70A
Print speed (mm/s)	30-80
Screen Residence Time	>2 hrs
Squeegee Type	Yellow: 70 Shore
Line/Space (μm)	100/250
Drying Time	20 mins
Drying Temperature	60-80°C
Curing Temperature	120-200°C in formic acid

Clean-Up

Equipment can be cleaned using ethylene glycol butyl ether then IPA

Paste Curing Conditions

It is recommended that printed structures should be processed in a reducing gas eg formic acid, shortly after drying.

Test	Properties
Sintering Technique Compatibility	Reducing gas eg formic acid

Properties of the Cured Paste

Test	Properties
Adhesion (ASTM D3359)	5B
Typical Print Thickness	8-11 μm
Sheet Resistance at 25 μm	<5m Ω/\square (200°C), <6m Ω/\square (140°C), <8m Ω/\square ((120°C)
Volume Resistivity	<12 $\mu\Omega\cdot\text{cm}$ (200°C), <17 $\mu\Omega\cdot\text{cm}$ (140°C), <20 $\mu\Omega\cdot\text{cm}$ (120°C)
Damp Heat Test (85°C, 85%RH)	Requires encapsulant, please contact sales representative

Storage and Shelf-life

Containers should be stored in a cool location (10-25°C) with lids tightly sealed. 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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