DM-SIP-1005

DYCOTEC MATERIALS

Product Description

DM-SIP-1005 is part of the Dycotec Materials product portfolio developed specifically for In-Mold Electronics (IME) applications. It is a solvent based screen printable conductive ink used to produce highly electrically conductive structures used in multilayer circuit designs. The paste is compatible with thermoforming processes and overmolding temperatures.

Product Benefits

- Excellent thermoformable characteristics for In-Mold Electronics (IME) use
- Excellent printability
- Excellent electrical conductivity (<40 mΩ/□/25µm)
- Compatible with Dycotec Materials IME dielectric and conductive adhesive pastes

Paste Preparation

DM-SIP-1005 is a thermoplastic silver 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 Uncured Paste

Test	Properties
Viscosity after mixing (Pa.s) (Cone and plate $50s^{-1}$, 20°C)	10 - 16
Screen residence time	>1 hour
Colour	Silver
Density	2.0 g/cm^3
Solids Content	62 - 68 % (vacuum oven dry at 80oC for 30 mins)

Paste Processing Conditions

Parameter	Typical Properties
Substrate	Polycarbonate
Screen	280 SS
Print speed	30-70 mm/s
Squeegee type	80A Shore
Print Resolution	250 µm (line and gap)

The paste can be dried using either a convection oven or using IR heating. Typical drying parameters used are 80°C followed by 110-130°C for 10-20 mins. Drying times may be reduced to achieve the optimum resistivity depending on manufacturing process set-up.

Properties of Cured Paste

Test	Typical Properties
Sheet Resistance	<40 mΩ/□/25µm
Sheet Resistance after Thermoforming	<100 mΩ/□/25µm
Typical Print Thickness	7-8 µm (280SS)
Adhesion (ASTM D3359)	5B, no removal
Environmental (85°C/85%RH,1000hrs)	No increase in sheet resistance

Clean-Up

Equipment can be cleaned using benzyl alcohol followed by iso-propanol, wipe dry.

Storage and shelf-life

Containers should be stored in a fridge at a temperature between 4-7˚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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