Micromax™ 8453

Electronic Inks and Pastes

Polymeric Silver Termination

Micromax™ 8453 is a polymeric, dippable plating base that provides a flexible stress buffer for plated component terminations. Micromax™ 8453 has been designed for a lower add on than Micromax™ 8452 and to give excellent bend strength and thermal shock resistance in surface mounted applications. The product may be used with a variety of dielectrics, and usually will be applied over a fired on silver or copper under-layer. The user must determine the compatibility in specific applications.

Product benefits

- Excellent dipping cosmetics
- High thermal shock stability
- Excellent plating performance
- Good green strength
- Processed though heat cure

Product information

Solvent or thinner	Micromax™ 9245
Solid content	55.5 - 58 %

Rheological properties

Viscosity	20 - 28[1] Pa.s

[1]: Brookfield RVT, UC&SP, SC4-14/6R, 10rpm, 25 °C

Application technique

Drying time	3 min
Drying temperature	130 - 150 °C

Storage and stability

Shelf life	3[2] months

[2]: in unopened containers, from date of shipment, at temperature of between 1-4 °C

Additional information

How to use

Processing

- Applications
  - Micromax™ 8453 termination composition can be applied by Palomar type dipping or by ChipStar type dipping. It is applied to ceramic component bodies. If necessary a blotting step can be used to control the paste deposit. Dipping should be carried out in a clean, well-ventilated area.

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- Undercoat
  - In order to achieve optimum contact to inner electrodes, it is recommended to apply a thin firde silver undercoat to the bodies prior the application of the Micromax™ 8453.
- Paste preparation
  - Micromax™ 8453 termination composition should be thoroughly mixed before use. This is best achieved by slow, gentle hand stirring with a clean, burr-free spatula (flexible plastic or stainless steel) for 1-2 minute.
  - Note: optimum dipping characteristic of Micromax™ 8453 termination composition are generally achieved in the temperature range 20 °C - 23 °C. It is therefore important that the material, in its container, is at this temperature prior to commencement of printing.
- Thinning
  - Micromax™ 8453 termination composition is optimized for dipping for the most commonly used chip sizes, thinning is not normally required. However, thinning may be required when Micromax™ 8453 is used on the larger chip sizes, customers need to determine the optimum conditions for their applications. Use the Micromax™ recommended thinner for slight adjustments to viscosity or to replace evaporation losses. The use of too much thinner or the use of a non recommended thinner may affect the rheological behaviour of the material and its printing characteristics.
- Drying
  - Micromax™ 8453 polymeric termination should be dried in a well-ventilated oven, or belt dryer.
- Curing
  - Micromax™ 8453 polymeric termination does not need to be fired. However, it does require a curing step to achieve optimum performance. It can be cured in a box. It is essential that the air supply to the oven is clean, dry , and free of contaminants. Micromax™ 8453 polymeric termination is best cured for 1 hour at a temperature of 200 °C. Variation in the curing temperature and/or time at the temperature may result in variation in the final properties.
- Dry/cure process sequence
  - Dip 1st end of ceramic body with Micromax™ 8453.
  - Dry as recommended.
  - Dip 2nd end of ceramic body with Micromax™ 8453.
  - Dry as recommended.
  - Remove ceramic bodies from carrier plate.
  - Cure as recommended.
- Electroplating

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- Chips terminated with Micromax™ 8453 and processed as recommended can be electroplated in conventional processes.

Properties

- Information in this datasheet shows anticipated typical physical properties for Micromax™ 8453 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

General

Yield and performances will depend to a large degree on the care exercised during processing, particularly in the dipping state. Scrupulous care should be taken to keep Micromax™ 8453 termination composition, the dippind equipment and other tools free of metal contaminants. Dust, lint and other particulate mattre may also contribute to poor yield.

Storage and shelf life

Storage: Containers of Micromax™ 8453 termination composition may be stored in a clean, stable environment at temperature of between 1-4°C, with their lids tightly sealed. Storage in freezers (temperature <0°C) is NOT recommended as this could cause irreversible changes in the material.
Shelf Life: Micromax™ 8453 termination composition has a shelf life of 3 months from date of shipment, for factory-sealed (unopened) containers, when stored under recommended conditions.

Safety and handling

For safety and handling information pertaining to this product, read Safety Data Sheet (SDS).

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