Micromax™ 4999

Electronic Inks and Pastes

Solderable Silver/Palladium Termination

Micromax™ 4999 is a solderable cadmium-free* and lead-free* 4/1 silver/palladium termination for multilayer capacitors. This product has good solderability and high adhesion over a wide range of capacitor bodies. This termination may be employed on parts where platable terminations are not desired but which will be subjected to soldering conditions.

Product benefits

- Cadmium, Lead, Nickel, and Phthalate free*
- Good adhesion and solderability
- Dip without a blot

*Cadmium, Lead, Nickel and Phthalate 'free' as used herein means that cadmium, lead, nickel, and phthalate are not intentional ingredients in and are not intentionally added to the referenced product. Trace amounts however may be present.

Product information

Solvent or thinner	Micromax™ 8218
Solid content	75 - 77 %

Rheological properties

Viscosity	50 - 68[1] Pa.s

[1]: Brookfield RVT, 14/6R, 10 rpm, 25°C

Storage and stability

Shelf life	6[2] months

[2]: in unopened containers, from date of shipment, at temperature <25°C

Additional information

How to use

Processing

- Applications
  - Carrier plate-type dipping.
- Substrates
  - Ceramic capacitors bodies.
- Dipping
  - Micromax™ 4999 termination 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 minutes, or by slow jar rolling for 24 hours. Dipping should be carried out in a clean, well-ventilated area.

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    - Note : Optimum dipping characteristics of Micromax™ 4999 are generally achieved in the temperature range of 21°C - 25°C.
- Thinning
    - Micromax™ 4999 is optimized for dipping and thinning is not normally required. Micromax™ 8218 may be used sparingly for slight adjustments to viscosity or to replace evaporation losses. However, the use of too much thinner or the use of a non-recommended thinner may affect the rheological behavior of the material and its dipping characteristics.
- Drying
    - 140 - 160°C peak, 15 - 20 minute cycle on belt dryer.
- Firing
    - 710°C - 750°C for 5-10 minutes peak, 40 minute cycle.
    - Care must be taken to ensure that any gases/vapors from other chemicals or materials (e.g. halogenated solvents) do not enter the furnace muffle. It is also essential that the air supply to the furnace is clean, dry and free of contaminants. Air flows and extraction rates should be optimized to ensure that oxidizing conditions exist within the muffle, and that no furnace exhaust gases enter the room. Micromax™ 4999 termination composition is fired on a 40 minute firing cycle to a peak of 710°C - 750°C, held for 5-10 minutes. Variations in the peak firing temperature and/or time at the peak temperature may result in variations in the final fired properties. Care must be taken to assess the appropriate firing conditions for a particular body type.

Properties

- Information in this datasheet shows anticipated typical physical properties for Micromax™ 4999 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Storage and shelf life

Containers should be stored, tightly sealed, in a clean, stable environment at room temperature (<25°C). Shelf life of material in unopened containers is six months from date of shipment. Some settling of solids may occur and compositions should be thoroughly mixed prior to use.

Safety and handling

For safety and handling information pertaining to this product, read Safety Data

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Sheet (SDS).

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