Celanese
The chemistry inside innovation™

Micromax™ 5742

Electronic Inks and Pastes

Gold-Cofireable Conductor

Micromax™ 5742 is intended for use as a co-fired gold conductor for Micromax™ GreenTape™ 951 System. Micromax™ 5742 can be used as an internal or external conductor for all gold systems or as an external conductor on traditional mixed metal systems. Micromax™ 5742 is wire bondable with 1 mil Au and 1 mil Al wire.

Product benefits

When used with GreenTape™ 951 compatible via fill pastes, Micromax™ 5742 offers the following benefits:

- High reliability
- High conductivity
- High circuit density
- Au and Al wire bondable (1 mil)

Product information

Solvent or thinner	Micromax™ 8250	
Solid content	79.5 - 81.5[1]	%

[1]: 750 °C

Rheological properties

Viscosity	100 - 180[2]	Pa.s

[2]: Brookfield HAT #14 Spindle; 10 RPM @ 25 °C

Application technique

Mask mesh	325[3]	
Mask emulsion	12	µm
Drying time	5 - 10	min
Drying temperature	80 - 120	°C
Theoretical coverage	80 - 90[4]	cm^2/g
Recommended film thickness, dried	13 - 18	µm
Recommended film thickness, fired	6 - 12	µm
Print resolution, lines	125[5]	µm
Print resolution, spaces	125[5]	µm
Leveling time	5 - 10	min

[3]: Screen Types: Stainless steel

[4]: Calculated at a wet thickness of 25µm

[5]: Dried Line Resolution

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Electrical properties

Surface resistivity	≤5[6]	mOhm per square

[6]: @9µm fired thickness

Storage and stability

Shelf life	6[7]	months

[7]: in unopened containers, from date of shipment, at room temperature (<25°C)

Additional information

How to use

Design & compatibility

- Design compatibility
  - Micromax™ has tested this composition with the GreenTape™ 951 System. It is impractical to cover every combination of materials, customer processing conditions and circuit layout. It is therefore essential that customers thoroughly evaluate the material in specific situations to completely satisfy themselves with the overall quality and suitability of the composition for its intended application(s).

Processing

- Substrates
  - Micromax™ GreenTape™ 951
- Printing
  - The composition should be thoroughly mixed prior to use. This is best achieved by slow, gentle, hand- stirring with a clean, burr-free, flexible plastic spatula for 1 – 2 minutes. Care must be taken to avoid air entrapment.
  - Printing should be performed in a clean, well- ventilated area. Optimum printing characteristics are generally achieved in the room temperature range of 20 – 23°C. It is therefore important that the material, in its container, is at this temperature prior to printing.
  - Print Micromax™ 5742 directly onto un-fired GreenTape™ 951 using thick film printing methods and a vacuum stone or other support structure that uniformly distributes vacuum.
- Thinning
  - This composition is optimized for screen printing; however, thinning may be required periodically to replenish solvent loss due to evaporation. Use the Micromax™ recommended thinner

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Micromax™ 8250 for slight adjustments to viscosity. The use of too much thinner or the use of non-recommended thinner may affect the rheological behavior of the material and its printing characteristics.

- Clean-up solvent
  - 1-Proxy-2- Propanol
- Drying
  - Allow prints to level at room temperature and then dry in a well-ventilated oven or conveyor dryer. Typical drying conditions can range between 80 – 120°C for 5 – 10 minutes.
  - Do not over dry.
- Lamination
  - Laminate external tape layers printed with multiple sheets of GreenTape™ using the recommended processing parameters outlined in the GreenTape™ Design Guideline and the GreenTape™ 951 product data sheets. Typical lamination conditions are 3000 psi at 70°C for 10 minutes.
- Firing
  - Consult the GreenTape™ 951 technical data sheets for firing recommendations. Fire in a well-ventilated conveyor or static furnace with optimized air flows and extraction rates to ensure oxidizing conditions within the firing zone. Contact your Micromax™ technical representative for details.

Properties

- Information in this datasheet shows anticipated typical physical properties for Micromax™ 5742 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

Container 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 Sheet (SDS).

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