Micromax™ 5704

Electronic Inks and Pastes

Multilayer Dielectric

Micromax™ 5704 is a screen printable dielectric for use in multilayer circuits as an insulator between conductor layers. It prints up to 15 cm/sec squeegee speed and fires to a pinhole-free smooth surface.

Product information

Solvent or thinner	Micromax™ 8672	
Solid content	73 - 75	%

Rheological properties

Viscosity	150 - 250[1]	Pa.s

[1]: Brookfield HAT, SC4-14/6R, 10 rpm, 25 °C

Application technique

Mask mesh	200 - 325	
Drying time	10 - 15	min
Drying temperature	150	°C
Theoretical coverage	60 - 70[2]	cm^2/g
Recommended film thickness, fired	45 - 50[3]	µm
Leveling time	5 - 10	min

[2]: value based on 50 µm wet film thickness

[3]: 3 fired layers, 325-mesh screen

Electrical properties

Dielectric Constant	8 - 10	
Dissipation Factor	≤0.5	%
Insulation Resistance, DC	≥1E12	Ohm
Breakdown Voltage	≥400	V

[4]: at 100 VDC

[5]: VDC at 25µm

Storage and stability

Shelf life	6[6]	months

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

Additional information

How to use

Processing

- Substrates
  - Properties are based on tests using 96% alumina substrates.

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Substrates of other compositions and from various manufacturers may result in variations in performance properties.

- Printing
  - Print individual dielectric layers with a 200 or 325 mesh stainless steel screen. A 325 mesh screen is recommended for best via resolution. The total thickness of the fired dielectric should be at least 40µm (1.6mil). Three separate printings of Micromax™ 5704 may be necessary to achieve this fired thickness when 325 mesh screens are used. Printing speeds up to 15cm/s (6in/s) can be achieved. Use a double wet squeegee pass to minimize pinholes.
  - Yield and performance will depend to a large degree on the care exercised during processing, particularly in screen printing. Care should be given to keeping the dielectric composition, printing screens and other tools free of metal contaminations. Dust, lint and other particular matter may also contribute to poor yields.
- Drying
  - Allow the wet print to level for 5-10 minutes at room temperature. Dry 10-15 minutes at 150°C.
- Firing
  - Each dielectric print should be fired separately in a belt furnace. Use a 30 or 60 minute cycle with a peak temperature of 850°C for 10 minutes.

Properties

- Information in this datasheet shows anticipated typical physical properties for Micromax™ 5704 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 Sheet (SDS).

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