

Micromax™ 5704

Electronic Inks & Pastes

PRODUCT DESCRIPTION

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.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

PRODUCT INFORMATION

General Properties	Value Unit
Application	High reliability dielectric
Solvent or thinner	Micromax™ 8672
Solid content	73 to 75 %

TECHNICAL DATA

Rheological Properties	Value Unit
Viscosity ¹	150 to 250 Pa.s

Application Technique	Value Unit
Mask mesh	200 to 325
Drying time	10 to 15 min
Drying temperature	150 °C
Theoretical coverage ²	60 to 70 cm ² /g
Recommended film thickness ³	45 to 50 µm
Leveling time	5 to 10 min

Electrical Properties	Value	Unit
Dielectric Constant	8 to 10	
Dissipation Factor	≤0.5	%
Insulation Resistance ⁴	≥1E12	Ohm
Breakdown Voltage ⁵	≥400	V
Storage and Stability	Value	Unit
Shelf life ⁶	6	months

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

²value based on 50 µm wet film thickness

³3 fired layers, 325-mesh screen

⁴at 100 VDC

⁵VDC at 25µm

⁶in unopened containers, from date of shipment, stable environment at room temperature between 5°C - 30°C

PROCESSING GUIDELINES

Substrates

Properties are based on tests using 96% alumina substrates. 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 between 5°C - 30°C. Shelf life of material in unopened containers is 6 months from date of shipment. Some settling of solids may occur and compositions should be thoroughly mixed prior to use.

Storage conditions on the product data sheets are intended to represent long-term material storage recommendations and not a shipping or temperature-at-receipt requirement.

Transportation: Under normal shipping conditions, without temperature control, Micromax™ products are not expected to exhibit a change in quality or fitness for use. Should extraordinary events result in extended transportation periods, Micromax™ recommends customers confirm products remain suitable for the intended application.

Safety and handling

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

SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use.

Safety Data Sheets are available.

WASTE TREATMENT

Prior to using any recommendations or suggestions for waste treatment, the user is required to know the appropriate local/state/federal regulations for on-site or off-site treatment which may require permits. If there is any conflict regarding our recommendations, local/state/federal regulations take precedence.

CONTACT INFORMATION

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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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