Micromax™ 5771

Microcircuit and Component Materials

Gold Conductor

Micromax™ 5771 is a cadmium-free*, screen printable, composition. It is used as a gold wire bondable conductor in high density hybrids. Micromax™ 5771 is capable of good automatic gold wire bonding yields with 1-mil and 2-mil wire. Micromax™ 5771 works well over multilayer dielectrics, such as Micromax™ QM44.

*Cadmium “free” as used herein means that this is not intentionally added to the referenced product. Trace amounts however may be present.

Product information

Solvent or thinner	Micromax™ 8672	
Solid content	83.7 - 85.7	%

Rheological properties

Viscosity	350 - 500[1]	Pa.s

[1]: Brookfield 2xHAT, SC4-14/6R, 10rpm, 25°C

Application technique

Mask mesh	325	
Mask emulsion	12	µm
Drying time	15	min
Drying temperature	150	°C
Theoretical coverage	50 - 80	cm^2/g
Recommended film thickness, fired	6 - 9	µm
Leveling time	10 - 15	min

Electrical properties

Surface resistivity	≤7[2]	mOhm per square

[2]: @10µm fired thickness

Storage and stability

Shelf life	6[3]	months

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

Additional information

How to use

Processing

- Substrates
  - Properties are based on tests using 96% alumina substrates. Substrates of other compositions and from various manufacturers

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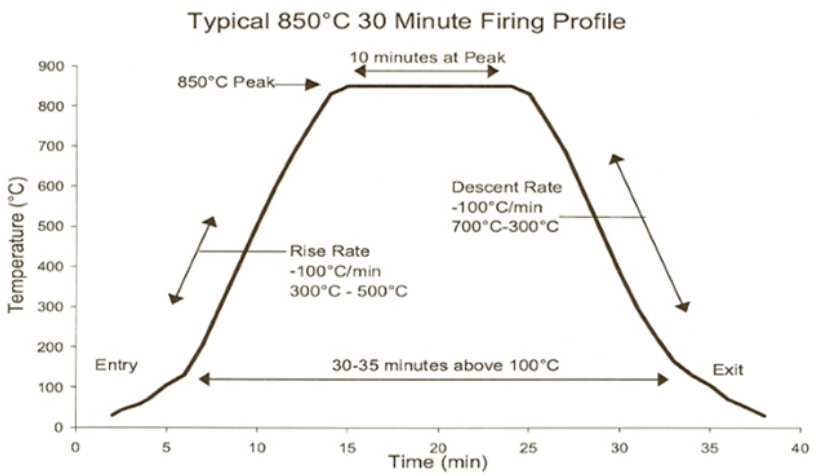
may result in variations in performance properties.

- Printing
  - A 325 mesh stainless steel screen with an 12 µm (0.5 mil) emulsion thickness is recommended. Printing speeds up to 15 cm/s (6 in/s) can be achieved.
- Drying
  - Allow the wet print to level at room temperature, then dried.
- Firing
  - Dried prints should be fired in a belt furnace. Use a 30 minute cycle with a peak temperature of 850°C for 10 minutes. No significant changes in performance characteristics were seen after multiple refirings at 850°C. See Figure 1.
- Bonding conditions
  - Hughes 2460-III Automatic Gold Wire Bonder, stage 150°C, ceramic tool, 1.0 mil Au wire, tensile strength 8g min, elongation 3 to 5%. Hughes 2456-III Automatic Gold Wire Bonder, stage 150°C, ceramic tool, 2.0 mil Au wire, tensile strength 40-45g, elongation 3 to 5%. K&S Model 4123 Uitrasonic Wedge Bonder, tool #41471-2535-152, 1.0 mil Al wire (1% silicon).



Properties

Typical Fired Properties

Test	Properties
Line Resolution (µm) [lines/spaces]	<150 / >100

Information in this datasheet shows anticipated typical physical properties for Micromax™ 5771 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available

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upon request.

Wirebond Properties
Automatic Thermosnonic

Test	Al_2O_3	Micromax™ QM44
Gold Wire Bonding 1.0 mil Diameter Initial (g)	≥10	≥10
Gold Wire Bonding 1.0 mil Diameter 1000h, 150°C Thermal Aging (g)	≥10	≥10
Gold Wire Bonding 2.0 mil Diameter Initial (g)	≥35	≥35
Gold Wire Bonding 2.0 mil Diameter 1000h, 150°C Aging (g)	≥35	≥35
Aluminum Wire Bonding 1.0 mil Diameter Initial (g)	≥10	-
Aluminum Wire Bonding 1.0 mil Diameter 315°C, 1.25h, Aging (g)	≥6	-

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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