

Micromax™ 5062S

Electronic Inks & Pastes

PRODUCT DESCRIPTION

Gold Base Layer for Low Temperature Brazing

Micromax™ 5062S and 5063R constitute a two component all thick film paste system designed to facilitate the use of high temperature solders and low temperature braze alloys on:

- Low temperature cofire ceramic (Micromax™ GreenTape™ 951)
- 96% Alumina
- Multilayer hybrid circuits (Micromax™ QM44)

Micromax™ 5062S is the gold base conductor and Micromax™ 5063R is the top frit-less gold conductor.

Product benefits

- Cd, Pb and Phthalate free*
- High strength, high reliability attachment mechanism
- Hermetic packaging

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

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

PRODUCT INFORMATION

General Properties	Value Unit
Application	Gold conductor
Solvent or thinner	Micromax™ 8672
Solid content ¹	84 to 86 %
Blend member or series	5062S and 5063R

TECHNICAL DATA

Rheological Properties	Value	Unit
Viscosity ²	260 to 360	Pa.s
Application Technique	Value	Unit
Mask mesh ³	325 to 280	
Mask emulsion	13 to 15	µm
Drying time	15	min
Drying temperature	150	°C
Theoretical coverage ⁴	84	cm ² /g
Recommended film thickness	9 to 12	µm
Electrical Properties	Value	Unit
Resistivity ⁵	≤10	mOhm per square
Storage and Stability	Value	Unit
Shelf life ⁶	6	months

¹@750 C/20 min

²Brookfield 2xHAT, 10rpm, UC&SP;#14 spindle, 25°C

³stainless steel mesh 1.1-1.4 wire diameter

⁴at 18-22 µm dried print thickness

⁵@10µm

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

PROCESSING GUIDELINES

Substrates

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

Printing

The composition 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 about 1-2 minutes. Care must be taken to avoid air entrapment. Printing should be performed in a well ventilated area. Print Micromax™ 5062S onto fired substrate using a 325-280 mesh, 13-15 µm emulsion screen.

Thinning

Micromax™ 5062S and 5063R compositions are optimized for screen printing and thinning is not normally required. Use the Micromax™ recommended thinner for slight adjustments to viscosity or to replace evaporation losses. The use of too much thinner or the use of a non recommended

thinner may affect the rheological behaviour of the materials and their printing characteristics.

Drying

Allow prints to level for over 10 minutes at room temperature, then dry for 10-15 minutes at 150°C.

Dry in a well ventilated oven or conveyor dryer.

Firing

Fire using standard 850°C, 30 minutes profile. Total fired thickness should be 9-12 µm.

Typical Physical Properties

Test	Properties
PGA Reliability* ¹ Thermal Aging* ² (N)	> 65

*1 Average tensile pull strength of a pin a standard pin grind array (PGA) brazed to Micromax™ GreenTape™ 951, PGA consists of 1.8 mm diameter pad of Micromax™ 5062S/5063R, and a 400 µm diameter Kovar pin with a 800 µm diameter nail head.

*2 1000 hours in air at 150°C

Attachment

Once the substrate has been prepared with Micromax™ 5062S and 5063R, pins window frames, or heat sinks may be attached with braze alloy (such as Au/In, Au/Ge, Au/Sn, etc.), performs, or pastes. Brazing is performed in a nitrogen atmosphere using fixtures that position the attachment and braze alloy directly on top of the Micromax™ 5062S/5063R metallization.

Information in this datasheet shows anticipated typical physical properties for Micromax™ 5062S & 5063R based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request. Brazing in a nitrogen atmosphere is recommended. We have not tested brazing in a reducing atmosphere.

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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