

Micromax™ 1029

Electronic Inks & Pastes

PRODUCT DESCRIPTION

Ag/Pt Conductor

Micromax™ 1029 Ag/Pt conductor is a solderable conductor for post-firing on LTCC substrates. It has been developed to be cost-effective and give excellent solderability and leach resistance for component attach.

Products benefits

- High conductivity
- High solderability
- High leach resistance
- Plateable
- Phthalate, Cadmium, Nickel oxide free*

* Phthalate, Cadmium, Nickel oxide 'free' as used herein means that cadmium, phthalate and nickel oxide 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

Application	LTCC conductor
Solvent or thinner	Micromax™ 4553
Solid content	82 to 85

TECHNICAL DATA

Rheological Properties	Value	Unit
Viscosity ¹	350 to 450	Pa.s

Application Technique	Value	Unit
Mask mesh	200 to 325	
Mask emulsion	12 to 14	µm
Drying time	≥10	min
Drying temperature	150	°C
Recommended film thickness	13 to 16	µm
Leveling time	10	min
Specific Application Suitability	Value	Unit
Solder leach resistance ²	≥5	cycles
Solder acceptance ³	≥95	%
Electrical Properties	Value	Unit
Resistivity ⁴	≤4	mOhm per square
Storage and Stability	Value	Unit
Shelf life ⁵	6	months

¹Brookfield HBT, UC&SP,, SC4-14/6R, 10 rpm, 25°C±0.2°C

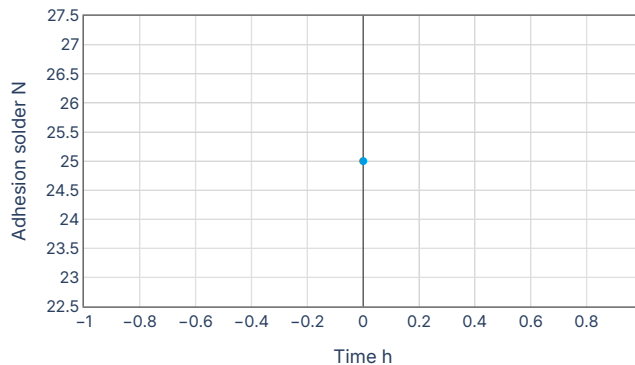
²62Sn/36Pb/2Ag at 230°C

³Coverage, 62Sn/36Pb/2Ag at 220°C. Using Alpha 611 flux. Solder coverage measured after a 5s dip in solder. A leaching cycle is represented by a 10s dip in solder and tested on 500µm lines. See soldering test procedure for details (H-1,12)

⁴@15µm fired thickness

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

Adhesion solder after heat ageing



PROCESSING GUIDELINES

Design & compatibility

Compatibility

Whilst Micromax™ has tested this composition with the materials specified above and the recommended processing conditions, it is impossible or impractical to cover every combination of materials, customer processing conditions and circuit layouts. It is therefore essential that customers thoroughly evaluate the material in their specific situations in order to completely satisfy themselves with the overall quality and suitability of the composition for its intended application(s).

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.

Note : Optimum printing characteristics are generally achieved in the room temperature range of 20°C - 23°C. It is therefore important that the material, in its container, is at the temperature prior to commencement of printing. Class 10,000 printing area is recommended for building complex hybrids and multilayer circuits, otherwise severe yield losses could occur.

Screen types

325 stainless steel mesh with 12-14µm emulsion build up.

Thinning

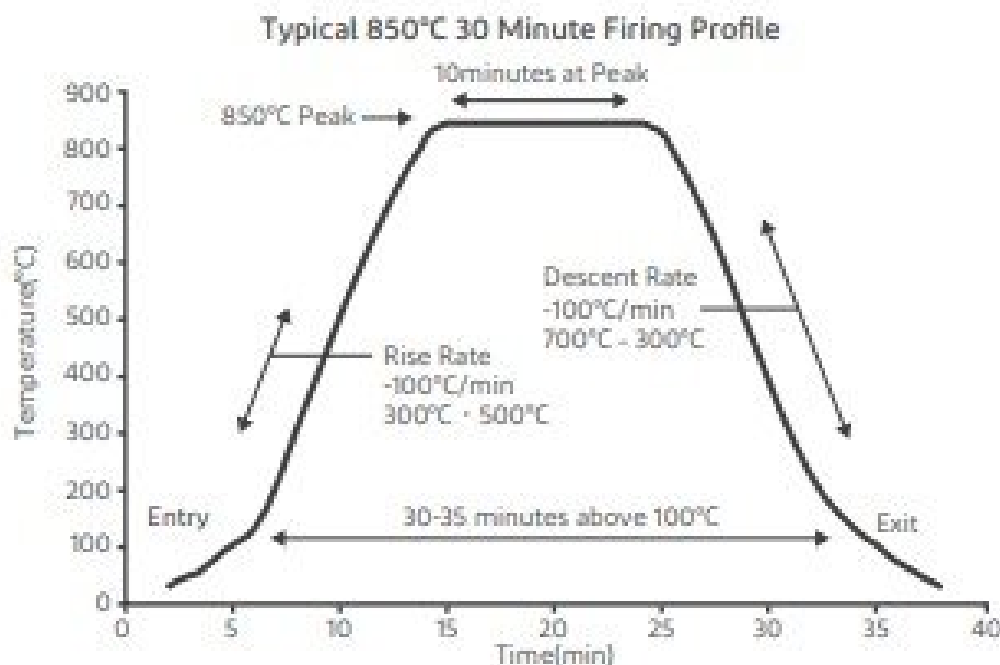
Micromax™ 1029 composition is optimized for screen printing and thinning is not normally required. Use the Micromax™ recommended thinner for slight adjustments to viscosity or to replace evaporation losses. The use of too much thinner or the use of a non-recommended thinner may affect the rheological behavior of the material and its printing characteristics.

Drying

Allow prints to level for 10 minutes at room temperature, then dry > 10 minutes at 150°C, in a well-ventilated oven or conveyor dryer.

Firing

Fire in well ventilated belt, conveyor furnace or static furnace at 850°C peak temperature held for 10 minutes on 30 minutes cycle in air atmosphere. Air flows and extraction rates should be optimized to ensure that oxidizing conditions exist within the muffle and that no exhaust gases enter the room.



Properties

Test procedure

Printing : 200 mesh stainless steel screen, 12-14µm emulsion thickness.

Firing : 3x 30 minute cycles to a peak temperature of 850°C for 10minutes.

Tested on 96% alumina substrates.

Information in this datasheet shows anticipated typical physical properties for Micromax™ 1029 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

General

Performance will depend to a large degree on care exercised in screen printing. Scrupulous care should be taken to keep the composition, printing screens and other tools free of metal contamination. Dust, lint and other particulate matter may also contribute to poor yields.

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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