

Micromax™ 5434I

Electronic Inks & Pastes

PRODUCT DESCRIPTION

Platable Silver C1 Termination

Micromax™ 5434I is a platable silver termination composition that has been specially developed for chip resistor applications.

Micromax™ 5434I is intended to be applied to ceramic substrates by screen printing and fired in a conveyor furnace in an air (oxidizing) atmosphere.

Product benefits

- Designed to manufacture all size components including 0402.
- Excellent print definition
- High acid resistance
- Excellent post-plating adhesion
- Fast firing 850°C/30 min

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

PRODUCT INFORMATION

General Properties	Value Unit
Application	Resistor termination
Solvent or thinner	Micromax™ 9252
Solid content ¹	79 to 80 %

TECHNICAL DATA

Rheological Properties	Value Unit
Viscosity ²	100 to 130 Pa.s

Application Technique	Value Unit
Mask mesh	325

Application Technique	Value	Unit
Mask emulsion	10 to 15	µm
Drying time	10	min
Drying temperature	150	°C
Recommended film thickness	16 to 20	µm
Recommended film thickness	9 to 11	µm
Leveling time	5 to 10	min
Electrical Properties	Value	Unit
Resistivity ³	≤4	mOhm per square
Storage and Stability	Value	Unit
Shelf life ⁴	6	months

¹750°C

²Brookfield HAT, UC&SP, SC-14/6R, 10 rpm, 25°C

³at 10µm fired thickness

⁴in unopened containers, from date of shipment, stable environment at room temperature between 5°C - 30°C

PROCESSING GUIDELINES

Substrates

Properties are based on tests on 96% alumina substrates. Substrates of other compositions and from various manufacturers may result in variations in performance, as may different lots of substrates, and any subsequent processing of substrates (e.g. laser scribing/drilling) prior to printing. It is the responsibility of users to determine the effects of any of the above variables in their particular situations.

Printing

Micromax™ 5434I termination composition should be thoroughly mixed before use. This is best achieved by slow, gentle, hand stirring with a clean burr-free spatula (flexible plastic) for 0.5-1 minutes. Care must be taken to avoid air entrapment. Printing should be carried out in a clean and well-ventilated area.

Note: Optimum printing characteristics of Micromax™ 5434I are generally achieved in the temperature range 20°C - 23°C. It is therefore important that material in its container, is at this temperature prior to commencement of printing.

Screen printing using a 325-mesh stainless steel screen with 10-15µm, emulsion, yields a dried thickness of 16-20µm, and a corresponding fired thickness of 9-11µm.

Drying

Allow prints to level for 5-10 minutes at room temperature in a clean, draught-free environment, followed by drying for 10 minutes at 150°C in a well-ventilated oven or conveyer dryer. See Safety and handling section for additional information.

Firing

Care must be taken to ensure that any gases/vapors from other chemicals/materials (e.g. halogenated solvents) do not enter the furnace muffle. It is also essential that the air supply to the furnace is clean, dry and free on contaminants. Air flows and extraction rates should be optimized to ensure that oxidizing conditions exist within the muffle, and that no furnace exhaust gases enter the room. Micromax™ 5434I should be fired on a 30 minute firing cycle to a peak temperature of 850°C held for 10 minutes.

Typical Physical Properties

Post Plated Adhesion* aged 48hr @ 125 °C >20 N

Information in this datasheet shows anticipated typical physical properties for Micromax™ 5434I based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

* Adhesion test were carried out as follow:

Test pattern: wire peel test with 2mm x 2mm pad size

Plating: 4 µm Ni followed by 8µm Sn/Pb

Solering: Alpha 611 RMA flux, 62Sn/36Pb/2Ag @220 °C, second dip

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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