

Micromax™ 5164N

Electronic Inks & Pastes

PRODUCT DESCRIPTION

Pt/Ag Conductor Paste for Hybrid Circuit

Micromax™ 5164N Pt/Ag Conductor is thick film conductor that meets the needs of low cost and high performance. Specially developed for the use of automotive, characteristic of excellent Electrical conductivity equal to Cu thick film and distinct Thermal Cycled Adhesion (TCA) with dense fired film and newly developed inorganic binder. And good Long Term Aging Adhesion (LTAA), excellent solderability, and super printability.

Product benefits

- High TCA and no conductor crack even after 2,000 cycles (-40 ~+125°C), 150°C aging 3,000 hrs.
- Excellent solderability and high electrical conductivity (2.53~3.0 ohm/sq)
- Good Wire bondability
- Excellent printability and fine line capability
- Wide process window: Insensitive to firing temperature, firing period, firing times and film thickness
- Good compatibility to substrate, printing resistor, cross-over glass, and over-coat glass
- Good TCA and LTAA with 2% Ag solder and 10SN/90Pb solder
- Standard conductor for Micromax™ resistor Series 00X0

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

PRODUCT INFORMATION

General Properties	Value	Unit
Application	Silver hybrid Ag	conductors
Solvent or thinner	Micromax™ 4553	

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 min
Drying temperature	150 °C
Recommended film thickness	10 to 14 µm
Leveling time	5 to 10 min

Electrical Properties	Value Unit
Resistivity	≤2 mOhm per square

Storage and Stability	Value Unit
Shelf life ²	6 months

¹Brookfield HBT, UC&S, 10 rpm, 25°C ± 1°C

²in 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 properties.

Printing

200-325 mesh stainless steel screen. Please mix well before printing.

Drying

Levelling at room temperature 5-10 min at 150°C for 10 min.

Firing

30 min profile (100°C - 100°C 30 min.), peak 850°C 10 min. (60 min profile is OK)

Typical Fired Properties

Test	Properties
Fine Line (µm)	~125
Soldering* ¹ (mm)	4.4
Solder Leach Resistance* ²	4 minutes

Adhesion Initial (N)* ³	38 (24)
Adhesion 150°C Aging (N) (3000H)	25 (20)
Adhesion Thermal Cycle* ⁴ (N) (2000)	25

*1 2 mm solder-ball Spread-test 230°C, 62Sn/36Pb/2Ag solder, 30 second

*2 Dipping time to 2 mm line solder leach (220°C, 62Sn/36Pb/2Ag solder)

*3 2.2 mm pad, 0.8 mm Wire peeling test

*4 Same as above, ~40~125°C, each 30 min/cycle

All values reported here are results of experiments in our laboratories intended to illustrate product performance potential with a given experimental design. They are not intended to represent the product's specifications.

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 & 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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