

Micromax™ 4597R

Electronic Inks & Pastes

PRODUCT DESCRIPTION

Solderable Conductor

Micromax™ 4597R is a phthalate and cadmium-free* solderable platinum/palladium/gold conductor for high density single and multilayer hybrids. It has excellent tin/lead solderability and exhibits high leach resistance on both alumina and dielectric.

Product benefits

When used on alumina or with Micromax™ multilayer dielectrics, Micromax™ 4597R offers the following benefits:

- Phthalate and Cadmium free* solderable
- Excellent solder acceptance
- Improved backlight density
- High circuit density
- High reliability

*Phthalate and cadmium 'free' as used herein means that these are not intentionally added to the referenced product. Trace amounts however may be present.

Typical Fired Properties

Initial Adhesion* ≥ 20 N

Aged Adhesion, 48 hrs at 150°C ≥ 14 N

*3X850°C fires/5sec dip/63Sn/37/Pb at 240°C.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

PRODUCT INFORMATION

General Properties	Value Unit
Application	High reliability Au/Pd/Pt conductor
Solvent or thinner	Micromax™ 9180R
Solid content ¹	80.1 to 81.4 %

TECHNICAL DATA

Rheological Properties	Value	Unit
Viscosity ²	180 to 280	Pa.s
Application Technique	Value	Unit
Mask mesh ³	200	
Mask emulsion	12	µm
Drying time	15	min
Drying temperature	150	°C
Theoretical coverage	60 to 70	cm ² /g
Recommended film thickness	13 to 17	µm
Print resolution	150	µm
Print resolution	100	µm
Leveling time	10 to 15	min
Specific Application Suitability	Value	Unit
Solder leach resistance ⁴	≥15	cycles
Solder acceptance ⁵	≥95	%
Electrical Properties	Value	Unit
Resistivity ⁶	30 to 100	mOhm per square
Storage and Stability	Value	Unit
Shelf life ⁷	6	months

¹1050°C

²Brookfield HBT, SC04 14/6R [UC&SP;], 10 RPM, 25°C

³Screen Types: Stainless steel

⁴On Alumina. 10 sec dips at 240°C 63Sn37Pb solder.

⁵On Alumina. In the case of on Micromax™ 5704, ≥ 97%.

⁶@15µm fired thickness

⁷in unopened containers, from date of shipment, stable environment at room temperature between 5°C - 30°C

PROCESSING GUIDELINES

Substrates

Properties are based on test using 96% alumina substrates. Substrates of other compositions and from various manufacturers may result in variations in performance properties.

Printing

A 200-mesh stainless steel screen with a 12µm (0.5 mil) emulsion thickness is recommended. Printing speeds up to 30 cm/s (12in/s) can be used.

Drying

Allow the wet print to level at room temperature and then dried.

Firing

Dried prints should be fired in a belt furnace. Use a 60-minutes cycle with a peak temperature of 850°C.

Properties

Information in this datasheet shows anticipated typical physical properties for Micromax™ 4597R based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

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

www.macdermidalpha.com

North America	Europe	Asia
470 Research Drive Wilmington, DE, USA 855.622.7813	Bristol & Bath Science Park Dirac Crescent, Emersons Green, Bristol, BS16 7FR, United Kingdom 44.117.4769148	No. 45 Hsing-Point Road Taoyuan City, 330457 Taiwan 886.3.3773588

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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