

Micromax™ 4078

Electronic Inks & Pastes

PRODUCT DESCRIPTION

MLC Termination Composition

Micromax™ 4078 is a 4/1 Ag/Pd MLC termination composition designed for Multilayer Ceramic Capacitors for use in surface mounted applications. This product is compatible with all MLC dielectrics.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

PRODUCT INFORMATION

General Properties	Value Unit
Application	Termination
Solvent or thinner	Micromax™ 8218
Solid content	75.5 to 76.5 %

TECHNICAL DATA

Rheological Properties	Value Unit
Viscosity ¹	60 to 80 Pa.s

Application Technique	Value Unit
Drying time ²	10 to 15 min
Drying temperature ³	140 to 160 °C

Storage and Stability	Value Unit
Shelf life ⁴	6 months

¹Brookfield RVT, 5 rpm, #4, @25°C

²box oven

³box oven

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

PROCESSING GUIDELINES

Applications

Micromax™ 4078 is optimized for dip application with a Chipstar or carrier plate termination system. A minimum band width of 15 mils is recommended. The composition should be applied in the temperature range 23-28°C. Operation outside this range causes poor cosmetics and coverage due to temperature-viscosity effects. The drying characteristics of the composition permits use over an 8-hour period at room temperature.

Solder leach performance

Micromax™ 4078 was tested for solder leach performance using 1206 parts and activated flux. With 62Pb/36Sn/2Ag solder, the parts had better than 95% coverage for 45 seconds at 230°C and 15 seconds at 260°C (static dip). In the more aggressive 60Pb/40Sn solder the same parts achieved 30 seconds at 230°C and 10 seconds at 260°C. In all cases, the solderability was excellent afterwards. The product 4933D can be used if improved solder leach resistance is needed.

Drying

Use a profiled belt drier and an 8 minute drying cycle with a peak temperature of 180°C. Alternatively, use a vented static oven (designed for explosion-proof operation) for 140-160°C for 10-15 minutes. Ensure safe exhaust of volatile products.

Firing

Micromax™ 4078 should be fired in a furnace which has a good supply of oil-free air. A carrier should be chosen that does not interact with the termination during firing. Over firing causes degradation of the solder leach performance, and under firing will lead to poor solderability

Heating rate 40°C/min

Cooling rate 40°C/min

Peak temperature 780-850°C

Soak time of 8.5 minutes above 765°C is required to achieve desired performance.

Composition Properties

Test	Properties
Metallurgy (Ag : Pd)	4 : 1

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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