Micromax™ 4078

Electronic Inks and Pastes

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.

Product information

Solvent or thinner	Micromax™ 8218	
Solid content	75.5 - 76.5	%

Rheological properties

Viscosity	60 - 80[1]	Pa.s

[1]: Brookfield RVT, 5 rpm, #4, @25°C

Application technique

Drying time	10 - 15[2]	min
Drying temperature	140 - 160[2]	°C

[2]: box oven

Storage and stability

Shelf life	6[3]	months

[3]: in unopened containers, from date of shipment, at temperature <25°C

Additional information

How to use

Processing

- 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.

Micromax™ 4078

Electronic Inks and Pastes

- 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.

Properties

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 (<25°C). Shelf life of material in unopened containers is six months from date of shipment. Some settling of solids may occur and compositions should be thoroughly mixed prior to use.

Safety and handling

For safety and handling information pertaining to this product, read Safety Data Sheet (SDS).