

Micromax™ 9C601

Electronic Inks and Pastes

Silver Conductor Paste

Micromax™ 9C601 is a silver via fill conductor composition, compatible with Micromax™ GreenTape™ 9KC low temperature co-fired ceramic system, targeting telecom application under 5G domain.

Product benefits

- Low cost, high conductivity metallization
- High frequency performance
- Cofire processing
- Phthalate, Lead, Cadmium, Nickel oxide free*

* Lead, Cadmium, Nickel and Phthalate 'free' as used herein means that lead, cadmium, nickel and phthalate are not intentional ingredients in and are not intentionally added to the referenced product. Trace amount however may be present.

Product information

Solvent or thinner	Micromax™ 9450
Solid content	94 - 95 ^[1] %
[1]: 750 °C Wt.	

Rheological properties

Viscosity	300 - 400 ^[2] Pa.s
[2]: Brookfield 2xHAT, UC&S, 10 rpm	

Application technique

Drying time	5 min
Drying temperature	120 °C
Via, diameter resolution	100 µm

Electrical properties

Surface resistivity	≤5 ^[3] mOhm per square
[3]: at 10µm fired thickness	

Storage and stability

Shelf life	6 ^[4] months
[4]: in unopened containers, from date of shipment, at temperature <25 °C	

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Additional information

How to use

Design & compatibility

- **Design**

- For detailed recommendations on use of Micromax™ GreenTape™ 9KC and conductors such as Micromax™ 9C601, see the Micromax™ GreenTape™ 9KC Design Guide Addendum and Micromax™ GreenTape™ 9KC Product Data Sheet. We recommend printing over the backing of the tape. For compatible co-fired and post fired conductor compositions, consult your Micromax™ representative.

Processing

- **Printing**

- The composition should be thoroughly mixed before use. This is best achieved by slow, gentle hand stirring with a clean burr-free spatula (flexible plastic or stainless steel) for about 1-2 minutes. Care must be taken to avoid air entrapment. Printing should be performed in a clean and well-ventilated area.
- Note : Optimum printing characteristics are generally achieved in the room temperature range of 20 °C - 23 °C. It is therefore important that the material, in its container, is at the temperature prior to commencement of printing. Viscosity, and therefore printability, of thick film compositions can be affected by ambient temperatures.
- From vias in unfired Micromax™ GreenTape™ 9KC and then print Micromax™ 9C601 directly into vias using through-hole screen printing methods and a stencil mask. A vacuum stone or other support structure that uniformly distributes vacuum to the Micromax™ GreenTape™ 9KC green sheet is recommended.

- **Clean-up solvent**

- 1-Propoxy-2-Propanol

- **Drying**

- Dry in air in a well-ventilated oven or conveyor dryer for 5 minutes at 120 °C. Do not over-dry. See material Safety Data Sheet for additional information.

- **Lamination and firing**

- Laminate multiple sheets of Micromax™ GreenTape™ 9KC onto which Micromax™ 9C601 has been printed according to processing parameters detailed in the Micromax™ GreenTape™ 9KC Design Guide Addendum and on the Micromax™

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GreenTape™ 9KC Product Data Sheet. Consult these documents as well for details of the recommended Micromax™ GreenTape™ 9KC firing profile for belt or box air furnaces.

Properties

- Information in this datasheet shows anticipated typical physical properties for Micromax™ 9C601 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

General

Performance will depend to a large degree on care exercised in screen printing. Scrupulous care should be taken to keep the composition, printing screens and other tools free of metal contamination. Dust, lint and other particulate matter may also contribute to poor yields.

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).