Celanese
The chemistry inside innovation™

Micromax™ 9C42

Electronic Inks and Pastes

Ag Cofirable Conductor

Micromax™ 9C42 co-fired silver conductor, part of the Micromax™ GreenTape™ 95C low temperature co-fired ceramic system, is ideally suited for signal lines, ground planes, and capacitor electrodes, targeting telecom application under 5G domain.

Product benefits

- Low cost, high conductivity metallization
- High circuit density
- Cofire processing
- Phthalate, Cadmium, Nickel oxide free*

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

Product information

Solvent or thinner	Micromax™ 8250

Rheological properties

Viscosity	180 - 270[1]	Pa.s

[1]: Brookfield HBT, UC&SP, 10 rpm, 25 °C ± 0.2 °C

Application technique

Mask mesh	325	
Mask emulsion	12	µm
Drying time	5	min
Drying temperature	80	°C
Recommended film thickness, fired	7 - 9	µm
Print resolution, lines	125[2]	µm
Print resolution, spaces	125[2]	µm

[2]: Dried Line Resolution, Calculated at a wet thickness of 25µm.

Electrical properties

Surface resistivity	3.3[3]	mOhm per square

[3]: at 9µm fired thickness

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Storage and stability

Shelf life	6[4] months

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

Additional information

How to use

Design & compatibility

- Design
  - For detailed recommendations on use of Micromax™ GreenTape™ 95C and conductors such as Micromax™ 9C42, see the GreenTape™ 95C Product Data Sheet. For compatible thick film compositions and their recommended use, 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 well ventilated area.
  - Note : Optimum printing characteristics are generally achieved in the room temperature range of 20°C - 23°C. Viscosity, and therefore printability, of thick film compositions can be affected by ambient temperatures.
  - Print Micromax™ 9C42 directly onto GreenTape™ 95C green sheets using thick film printing methods and a vacuum stone or other support structure that uniformly distributes vacuum to the sheets. Printing is typically performed using a 325 mesh stainless steel screen with 12µm emulsion thickness.
- Thinning
  - Thinning thick film compositions is not recommended as material is supplied formulated for optimal performance. Improper thinning may affect printing characteristics. Thinner may be added to replenish solvent lost during normal usage, but care should be taken to not over-thin.
- Drying
  - Dry in air in a well-ventilated oven or conveyor dryer for 5 minutes at 80°C. Do not over-dry.
- Lamination and firing
  - Laminate multiple sheets of the printed circuit patterns according to the processing parameters detailed in the Micromax™

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GreenTape™ 95C Product Data Sheet. Also reference these documents of details on the recommended firing profiles.

Properties

- Information in this datasheet shows anticipated typical physical properties for Micromax™ 9C42 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 (<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).