

MicromaxTM TC501

Electronic Inks and Pastes

Gold Cofireable Via Fill

Micromax[™] TC501 is a gold via fill compatible with Micromax[™] GreenTape[™] 951 low temperature co-fired ceramic system. Micromax[™] TC501 is ideally suited to applications requiring high conductivity, reliable interconnection between gold conductors.

Product benefits

When used with GreenTape™ 951 and compatible conductor pastes, Micromax™ TC501 offers the following benefits:

- High reliability, high conductivity metallization
- High circuit density
- Stacked/thermal or routing vias
- Cofired processing

Product information

Solvent or thinner Micromax™ 9450

Rheological properties

Viscosity 3500 - 4500^[1] Pa.s

[1]: Brookfield HBT, UC&SP @1 rpm after 3 min settling time

Application technique

Drying time	5 min
Drying temperature	120 °C
Theoretical coverage	$0.15 \text{ cm}^2/\text{g}$
Via, diameter resolution	100 µm

Electrical properties

Surface resistivity ≤5^[2] mOhm per square

[2]: Fired Resistivity, at 25 μm fired thickness.

Storage and stability

Shelf life 6^[3] months

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

Printed: 2023-09-21 Page: 1 of 3

Revised: 2023-04-11 Source: Celanese Materials Database



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Additional information

How to use

Design & compatibility

Design

For detailed recommendations on use of Micromax[™]
 GreenTape[™] 951 and conductors such as Micromax[™] TC501,
 see the GreenTape[™] 951 Product Data Sheet. For compatible
 thick film compositions and their recommended use see the
 GreenTape[™] 951 Product Selector Guide.

Processing

Substrates

Unfired Micromax™ GreenTape™ 951

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 1-2 minutes. Care must be taken to avoid air entrapment.
- Printing should be performed in a clean and well-ventilated area.
 Optimum printing characteristics are generally achieved in the room temperature range of 20-23 °C. Viscosity, and therefore printability, of thick film compositions can be affected by ambient temperatures.
- Form vias in unfired 951 GreenTape. The preferred method for via fillings is use of stencil masks and screen printing methods. A vacuum stone or other support structure that uniformly distributes vacuum to the 951 green sheet is recommended.

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.

Clean-up solvent

• 1-Proxy-2- Propanol

Drying

 Do not over-dry. Dry in air in a well-ventilated oven or conveyor dryer.

Lamination and firing

 Laminate multiple sheets of the Micromax[™] GreenTape[™] 951 low temperature co-fired ceramic system into which Micromax[™]

Printed: 2023-09-21 Page: 2 of 3

Revised: 2023-04-11 Source: Celanese Materials Database



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TC501 has been printed according to processing parameters detailed in the GreenTape™ 951 Design Guide and on the GreenTape™ 951 Product Data Sheet. Consult these documents as well for details of the recommended GreenTape™ 951 firing profile for belt or box air furnaces.

Properties

Information in this datasheet shows anticipated typical physical properties
for MicromaxTM TC501 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).

Printed: 2023-09-21 Page: 3 of 3

Revised: 2023-04-11 Source: Celanese Materials Database

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