# Micromax™ TC502

## Electronic Inks and Pastes

## Conductor Paste

Micromax™ TC502 is a wire bondable gold composition designed for Micromax™ GreenTape™ 951 low temperature co-fired ceramic system. This composition is cadmium, lead, nickel and phthalate free*. Micromax™ TC502 can be used as an external wire bondable composition as well as an internal signal line conductor.

## Product benefits

- Cadmium, Lead, Nickel and Phthalate free*
- High conductivity
- Wire bondable with 1 and 2 mil gold wire
- Good bondability on fine pitch lines
- Low distortion
- Cofired processing

* Cadmium, Lead, 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™ 8250 | |
| Solid content | 84 - 86 | % |

## Rheological properties

| | | |
|---|---|---|
| Viscosity | 150 - 275[1] | Pa.s |

[1]: Brookfield 2xHAT, UC&SP @ 10 rpm, 25ºC

## Application technique

| | | |
|---|---|---|
| Mask mesh | 325 | |
| Mask emulsion | 12 | µm |
| Drying time | 5 | min |
| Drying temperature | 120 | °C |
| Recommended film thickness, dried | 13 - 17 | µm |
| Print resolution, lines | 125[2] | µm |
| Print resolution, spaces | 125[2] | µm |

[2]: Dried Line Resolution

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## Storage and stability

| | |
|---|---|
| Shelf life | 6[3] months |

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

## Additional information

How to use

### Processing

- Applications
  - Micromax™ TC502 can be processed according to the Micromax™ GreenTape™ 951 design guide and data sheet instructions. No special considerations are needed in the design and use of this product.
- Substrates
  - Unfired Micromax™ GreenTape™ 951
- Printing
  - Micromax™ TC502 should be printed to approximately 15±2 microns dried thickness for optimal bond adhesion. This can be accomplished using a 325 mesh, 12mm screen. Thoroughly stir the composition before use using a slow gentle hand movement with a burr free spatula. Take care not to entrap air during stirring.
  - Printing should be performed in a clean, well-ventilated area. Optimal printing is achieved at a room temperature of 20-23°C. Rheology and printing characteristics can change with temperature variations. Print Micromax™ TC502 directly onto unfired Micromax™ GreenTape™ 951 using a vacuum stone or other support structure.
- Thinning
  - Thinning is not recommended for this composition since printing characteristics may change with rheology changes. Thinner can, however, be used to replenish lot solvent.
- Drying
  - Do not over-dry. After printing, parts should be dried in a well-ventilated oven or conveyor.
- Lamination and firing
  - After printing and drying, multiple green sheets can be laminated together to form a circuit according to the process parameters discussed in the Micromax™ GreenTape™ 951 low temperature co-fired ceramic system Design Guide. The Design Guide also has more detail on box and belt firing profiles.

### Properties

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- Information in this datasheet shows anticipated typical physical properties for Micromax™ TC502 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).



Revised: 2023-04-17 Source: Celanese Materials Database