

Micromax™ CB500

Microcircuit and Component Materials

Removable Conductive Silver Plating Ink For Printed Circuit Boards

Micromax™ CB500 was developed for electroplating applications for the Printed Circuit Board (PCB) market. This product eliminates the need for bus bars or other copper connections and removes the need for "after plating", ultimately reducing process cost. This composition was designed to be applied using standard screen printing equipment and designed to be removed easily after plating.

Product benefits

- Reduces cost and process steps for electroplating applications
- No residual ink on board after strip (avoid stud bump antenna effect)
- Low temperature processing
- Low resistance
- Can be used in a wide variety of applications on various substrates (epoxy glass, polyimide films, ceramic and other flexible and rigid substrates)

Product information

Solvent or thinner	Micromax™ 8250
Solid content	77 - 85 %

Rheological properties

Viscosity	30 - 60 ^[1] Pa.s
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[1]: Brookfield RVT, #14 spindle & UC, 10 rpm, 25°C

Application technique

Mask mesh	325 ^[2]
Mask emulsion	12.5 ^[2] µm
Drying time	10 min
Drying temperature	120 - 140 °C
Theoretical coverage	30 - 40 ^[3] cm ² /g
Recommended film thickness, dried	23 - 27 ^[4] µm
Print resolution, lines	≤175 ^[5] µm
Print resolution, spaces	≥75 µm
Leveling time	5 - 10 min

[2]: stainless steel

[3]: at 25µm thickness

[4]: 325 mesh stainless steel

[5]: 125µm/125µm artwork

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Electrical properties

Surface resistivity

≤100^[3] mOhm per square

[3]: at 25μm thickness

Storage and stability

Shelf life

6^[6] months

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

Additional information

How to use

Processing recommendations

- This document reflects standard processes, including those commonly used for typical screen printing of electronic inks. Processes may vary by application. Please contact us for specific processing recommendations.

Processing

- **Clean copper**
 - The copper surface must be cleaned/prepared (e.g. pumice scrub) before printing the Micromax™ CB500.
- **Printing**
 - Micromax™ CB500 can be applied using a 325 mesh stainless steel screen with 12.5μm (0.5mil) emulsion to achieve a cured thickness of 25μm (±2μm). Excessive print thickness may result in difficulty stripping Micromax™ CB500. Other screen meshes and/or polyester screens can be used but may yield a different conductor thickness. Recommended minimum line width is 175-250μm depending on screen selection.
- **Work life**
 - > 1 hour
- **Drying and curing**
 - Allow the wet print to level for 5-10 minutes at room temperature prior to drying. Dry for 10 minutes at 120-140 °C in a well ventilated box oven or conveyor dryer where the exhaust meets environmental regulations.
 - Note : Higher cure temperatures may result in difficulty stripping the Micromax™ CB500. See Safety and handling section for additional information.
- **Plating resist**
 - Apply a dry film or a screen printable plating resist directly over Micromax™ CB500 using the vendors recommended

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process. Ensure that Micromax™ CB500 is completely covered with the plating resist. Recommended overlap is $\geq 250\mu\text{m}$. For selective image, use 2.5-3mil dry film and vacuum laminate for optimal confirmation.

- **Plating**
 - Electroplate the desired circuitry.
- **Strip plating resist**
 - Use standard resist strip (MEA-based). Strip plating resist using vendor's recommended process. Typically Micromax™ CB500 will be removed along with the plating mask. Resist stripping in dip tanks may require a double pass and nylon brushing followed by high pressure water spray.

Storage and shelf life

Containers should be stored, tightly sealed, in a clean, stable environment at room temperature ($<25^{\circ}\text{C}$). 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).