

Micromax™ 5421E

Microcircuit and Component Materials

Platable Termination For Chip Resistors Applications

Specially developed for chip resistors applications, Micromax™ 5421E is a platable Leadfree*, Cadmium-free* silver/palladium C1 termination that meets the needs of low cost, high performance and green product.

Product benefits

- Lead free*
- Cadmium free*
- High acid resistance
- Dense fired film
- Platable
- Fast firing, 850 °C/30min profile
- Cost effective, 0.5% palladium content
- Compatible with Micromax™ 00X0srs resistors

*Cadmium and lead “free” as used herein means that these are not intentionally added to the referenced product. Trace amounts however may be present.

Product information

Solvent or thinner	Micromax™ 4553
Solid content	75.6 - 77.6 ^[1] %
Fineness Of Grind, 4th scratch	≤20 μm
Fineness Of Grind, 50% point	≤10 μm
[1]: 750 °C	

Rheological properties

Viscosity	210 - 260 ^[2] Pa.s
[2]: Brookfield HBT, SC4-14/6R @10 rpm, 25 °C	

Application technique

Mask mesh	325 ^[3]
Mask emulsion	15 μm
Drying time	15 ^[4] min
Drying temperature	150 ^[4] °C
Recommended film thickness, dried	16 - 20 μm
Leveling time	10 - 15 min
[3]: Screen Types: Stainless steel	
[4]: Box oven	

Micromax™ 5421E

Microcircuit and Component Materials

Electrical properties

Surface resistivity

$\leq 10^{[5]}$ mOhm per square

[5]: @12μm

Storage and stability

Shelf life

6^[6] months

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

Additional information

How to use

Processing

- **Substrates**
 - Properties are based on test using 96% alumina substrates. Substrates of other compositions and from various manufacturers may result in variations in performance properties.
- **Printing**
 - Properties are based on Micromax™ 5421E printed to 18 ± 2 μm dried thickness using 325 mesh stainless steel screen with an emulsion thickness of approximately 15μm.
- **Drying**
 - Allow the wet print to level at room temperature and then dried.
- **Firing**
 - Dried prints should be fired in a belt furnace. Use a 30-minutes cycle with a peak temperature of 850°C x 10 minutes

Properties

Typical Fired Properties

Test	Properties
F.O.G – 4th scratch	$\leq 20\mu\text{m}$
F.O.G – 50% point	$\leq 10\mu\text{m}$

Information in this datasheet shows anticipated typical physical properties for Micromax™ 5421E 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

Micromax™ 5421 E

Microcircuit and Component Materials

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).

NOTICE TO USERS: Values shown are based on testing of laboratory test specimens and represent data that fall within the standard range of properties for natural material. These values alone do not represent a sufficient basis for any part design and are not intended for use in establishing maximum, minimum, or ranges of values for specification purposes. Colourants or other additives may cause significant variations in data values. Properties of moulded parts can be influenced by a wide variety of factors including, but not limited to, material selection, additives, part design, processing conditions and environmental exposure. Other than those products expressly identified as medical grade (including by MT® product designation or otherwise), Celanese's products are not intended for use in medical or dental implants. Regardless of any such product designation, any determination of the suitability of a particular material and part design for any use contemplated by the users and the manner of such use is the sole responsibility of the users, who must assure themselves that the material as subsequently processed meets the needs of their particular product or use. To the best of our knowledge, the information contained in this publication is accurate; however, we do not assume any liability whatsoever for the accuracy and completeness of such information. The information contained in this publication should not be construed as a promise or guarantee of specific properties of our products. It is the sole responsibility of the users to investigate whether any existing patents are infringed by the use of the materials mentioned in this publication. Moreover, there is a need to reduce human exposure to many materials to the lowest practical limits in view of possible adverse effects. To the extent that any hazards may have been mentioned in this publication, we neither suggest nor guarantee that such hazards are the only ones that exist. We recommend that persons intending to rely on any recommendation or to use any equipment, processing technique or material mentioned in this publication should satisfy themselves that they can meet all applicable safety and health standards. We strongly recommend that users seek and adhere to the manufacturer's current instructions for handling each material they use, and entrust the handling of such material to adequately trained personnel only. Please call the telephone numbers listed for additional technical information. Call Customer Services for the appropriate Materials Safety Data Sheets (MSDS) before attempting to process our products.

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