

# Micromax™ PE825

## Electronic Inks and Pastes

### Silver Composite Conductor

Micromax™ PE825 Silver Composite Conductor is used to fabricate low-voltage circuitry, on flexible substrates including polyester film. Micromax™ PE825 is a highly efficient silver-bearing conductor that possesses excellent abrasion resistance, adhesion, & print resolution. Micromax™ PE825 is fully compatible with Micromax™ 8144 (overcoat carbon) and Micromax™ 5018 UV dielectric.

### Product benefits

- High Conductivity Silver Composite Conductor
- Thermal Cure 120-140 °C; 2-10 minutes
- < 30 mOhms/square/mil at 10µm
- Primarily for Membrane Switch Applications

### Product information

Solvent or thinner	Micromax™ 8210
Density	2.6 g/cm <sup>3</sup>
Solid content	73 - 77 <sup>[1]</sup> %
[1]: 150 °C	

### Rheological properties

Viscosity	15 - 35 <sup>[2]</sup> Pa.s
[2]: Brookfield RVT, #14 spindle, 10 rpm, 25 °C	

### Application technique

Mask mesh	230 - 325 <sup>[3]</sup>
Drying time	2 - 10 min
Drying temperature	120 - 140 °C
Theoretical coverage	180 <sup>[4]</sup> cm <sup>2</sup> /g
Recommended film thickness, dried	10 - 15 µm
[3]: Screen Types: Stainless steel	
[4]: at 10µm, in the case of at 15µm, 130 cm <sup>2</sup> /g	

### Typical mechanical properties

Adhesion, cross hatch	5B <sup>[5]</sup> class
[5]: ASTM D3359-78, w/3M Scotch Tape #600	

# Micromax™ PE825

## Electronic Inks and Pastes

### Electrical properties

Surface resistivity	$\leq 30^{[6]}$ mOhm per square	
Resistivity retention after crease, 180°C, 1 cycle, 2kg	$\leq 15^{[7]}$ %	ASTM F 1683
[6]: at 25µm, 140°C/10min (10µm dried print thickness)		
[7]: ASTM F1683, 180degc, 1 cycle, 2kg, No Encap. In the case of Micromax™ 5018 UV Encap, <12%.		

### Storage and stability

Shelf life	6 <sup>[8]</sup> months
[8]: in unopened containers, from date of shipment, at temperature <25°C	

### Additional information

How to use

### Processing

- **Substrates**
  - Polyester film (print-treated, non-print-treated)
  - Coated papers & nonwovens
  - Rigid epoxy or glass
- **Screen types**
  - 325-230 wire/inch stainless steel mesh
  - 120-90 thread/cm polyester mesh
- **Printing**
  - Automatic reel-to-reel
  - Semi-automatic flat-bed
  - Rotary screen/cylinder screen
- **Thinning**
  - Thinning is not recommended.
- **Clean-up solvent**
  - Ethylene diacetate
- **Drying**
  - Dry at 120-140°C oven for 2-10 minutes in a well-ventilated oven or conveyor dryer, where the exhaust meets environmental regulations. Drying efficiency, print quality/ thickness help insure best electrical & physical performance.
- **Overprint carbon/dielectric**
  - Micromax™ 8144/5018

### Properties

Typical Physical Properties (Printed on Melinex ST505 Polyester Film)

Test	Properties
------	------------

# Micromax™ PE825

## Electronic Inks and Pastes

Abrasion Resistance, Pencil Hardness (ASTM D3363-74) [H]	2
---	---

Information in this datasheet shows anticipated typical physical properties for Micromax™ PE825 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).

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.

© 2023 Celanese or its affiliates. All rights reserved. Celanese®, registered C-ball design and all other trademarks identified herein with ®, TM, SM, unless otherwise noted, are trademarks of Celanese or its affiliates. Fortron is a registered trademark of Fortron Industries LLC. KEPITAL is a registered trademark of Korea Engineering Plastics Company, Ltd.