

# Micromax™ PE827

## Electronic Inks and Pastes

### Ultra-Low Temperature Cure Silver Composite Conductor

Micromax™ PE827 is a very low temperature drying Silver Composite Conductor. Micromax™ PE827 has been designed to maintain low temperature substrate tolerances as this composition can be processed between 60 °C-100 °C. When dried using these low temperatures, Micromax™ PE827 has a unique ability to achieve very good physical and electrical properties. Micromax™ PE827 is a more economical version of Micromax™ PE828.

### Product benefits

- Very low temperature drying
- Best thermal cure achieved between 60-100 °C
- Excellent adhesion to a variety of substrates
- Compatible/blendable with Micromax™ PE828 for desired resistivity

### Product information

Solvent or thinner	Micromax™ 8270
Density	2.6 g/cm <sup>3</sup>
Solid content	76 - 80 <sup>[1]</sup> %
[1]: 150 °C	

### Rheological properties

Viscosity	15 - 50 <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	10 - 20 min
Drying temperature	60 - 100 °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 10 μm	

### Typical mechanical properties

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

# Micromax™ PE827

## Electronic Inks and Pastes

### Electrical properties

Surface resistivity	$\leq 120^{[6]}$ mOhm per square	
Resistivity retention after crease, 180°C, 1 cycle, 2kg	$\leq 30^{[7]}$ %	ASTM F 1683
[6]: at 25µm		
[7]: ASTM F1683, 180degc, 1 cycle, 2kg		

### 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

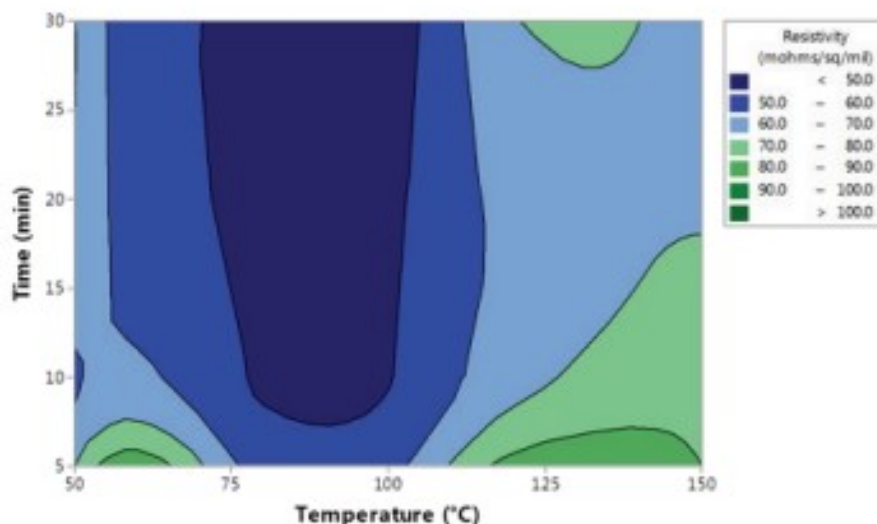
### Processing

- **Substrates**
  - Polycarbonate
  - PVC
  - Acrylic
  - Polyester film
  - Polystyrene
  - PVDF
- **Screen types**
  - Stainless steel mesh - 325-230 wire/inch (SD 50/30-SD 75/36)
  - Polyester mesh - 90-40 to 61-64 thread/cm
- **Printing**
  - Automatic reel-to-reel
  - Semi-automatic flat-bed
- **Thinning**
  - Thinning is not recommended.
- **Clean-up solvent**
  - Triethyl phosphate
- **Drying**
  - For best conductivity, dry at 60°C - 100°C in a well-ventilated box/static oven for 10-20 minutes Conveyorised/tunnel ovens tend to be more efficient and drying times will be shorter. Drying efficiency, and print quality/thickness help insure best electrical and physical performance. Graph 1 shows a relationship between resistivity, time and temperature.
- **Dielectric**
  - Micromax™ 8270

# Micromax™ PE827

Electronic Inks and Pastes

**Graph 1 - PE827 Normalized Resistivity vs Time & Temperature**



## Properties

Typical Physical Properties (Printed on Melinex ST505 Polyester Film)

Test	Properties
Abrasion Resistance, Pencil Hardness (ASTM D3363-74) [H]	1

Information in this datasheet shows anticipated typical physical properties for Micromax™ PE827 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).

# Micromax™ PE827

## Electronic Inks and Pastes

Printed: 2023-09-21

Page: 4 of 4

Revised: 2023-06-26     Source: Celanese Materials Database

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.