

# Micromax™ 8144

## Electronic Inks and Pastes

### Electroluminescent Material

Micromax™ 8144 electroluminescent material is a carbon conductor designed for use with the Micromax™ Electroluminescent (EL) System for manufacturing screen-printed EL lamps. It is fully compatible with the phosphors, dielectrics and conductors of the system. Micromax™ 8144 may be employed as an economical rear electrode in cases where high conductivity is not required.

### Product benefits

- Low affinity for moisture
- Compatible with Micromax™ EL System
- Low cost
- Excellent adhesion to Indium Tin Oxide (ITO) sputtered polyester

### Product information

Solvent or thinner	Micromax™ 5928
Solid content	35 - 40 <sup>[1]</sup> %
[1]: 150°C	

### Rheological properties

Viscosity	20 - 80 <sup>[2]</sup> Pa.s
[2]: Brookfield RVT, #14, 10 rpm, 25°C	

### Application technique

Mask mesh	200 - 325
Mask emulsion	20 - 25 µm
Drying time	5 min
Drying temperature	130 °C
Theoretical coverage	110 - 130 cm <sup>2</sup> /g
Recommended film thickness, dried	9 - 13 <sup>[3]</sup> µm
[3]: layer thickness	

### Electrical properties

Surface resistivity	≤12000 <sup>[4]</sup> mOhm per square
[4]: at 25µm	

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### Storage and stability

Shelf life

6<sup>[5]</sup> months

[5]: in unopened containers, from date of shipment, at temperature <25 °C (>0 °C)

### Additional information

How to use

### Design & compatibility

- **Compatibility**

- Micromax™ 8144 carbon conductor is fully compatible with the Micromax™ Electroluminescent System and should be employed together with phosphors and dielectrics in that system. While Micromax™ has tested this composition with specified materials and under the recommended processing conditions, it is impossible or impractical to cover every composition of materials, customer processing conditions and circuit layout. It is therefore essential that customers thoroughly evaluate this material in their specific situations, in order to completely satisfy themselves as to the overall quality and suitability of the composition for its intended applications.

### Processing

- **Substrates**

- Polyester, ITO-Polyester (80Ω/sq), Micromax™ EL dielectric, glass

- **Screen types**

- 200-325 mesh stainless steel/Polyester
- 20-25μm emulsion

- **Printing**

- Semi-automatic or manual
- This composition must be thoroughly mixed before use. This is best achieved by slow, gentle, hand stirring with a clean, preferably plastic spatula for several minutes. Care must be taken to avoid air entrapment.
- Printing should be performed in a clean and well ventilated area.
- Note : Optimum printing characteristics are generally achieved in the room temperature range of 20 °C - 23 °C. It is therefore important that material, in its container, is at this temperature prior to commencement of printing.

- **Work life**

- > 2 hours

- **Thinning**

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- Micromax™ 8144 electroluminescent material is optimised for screen printing and thinning is not normally required. Micromax™ 5928 may be used sparingly for slight adjustments to viscosity or to replace evaporation losses. However, the use of too much thinner or the non-recommended thinner may affect the rheological behaviour of the material and its printing characteristics.
- **Clean-up solvent**
  - Ethylene diacetate, acetone
- **Drying**
  - Box oven : 130 °C/5 min.

### Properties

- Information in this datasheet shows anticipated typical physical properties for Micromax™ 8144 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), with their lids tightly sealed. Storage in freezers (temperature <0 °C) is NOT recommended as this could cause irreversible changes in the material. 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. Phosphor particles tend to settle out during static storage. Gentle jar rolling or turning the jars may be used to minimize setting of the phosphor component.

### Safety and handling

For safety and handling information pertaining to this product, read Safety Data Sheet (SDS).