Inks for Electroluminescent (EL) Light Panel Production

Introduction

The Pink Dielectric Ink are produced specially for the manufacturing of Pink Off/White On (POWO) Electroluminescent (EL) Light Panel. The Ink are manufactured based on a unique curing process that results in the low temperature formation of a thermosetting polymer that combines good adhesion to EL Phosphor Layer with excellent chemical, environmental and abrasion resistance. As a result, theses inks can be used to make vibrant Electroluminescent Light Panels with good working life.

Nejilock Technology uses high quality Barium Titanate Powder and our proprietary organic binder to create this range of Electroluminescent Dielectric Printing Inks suitable for Silk Screen Printing applications.

NP003 Dielectric (Pink) was specially formulated for the production of Pink Off/White On (POWO) Electroluminescent Light Panel. It works best with our Phosphor Ink, Silver Paste and Inverters.

Properties

Using good quality Barium Titanate from reputable source and our proprietary Binder System, we provide you this Dielectric Ink with excellent adhesion to our Phosphor Ink System. We would like to assure you that we supply you only the best materials with good physical and chemical properties. This is to ensure that you will be able to consistently produce good quality Electroluminescent Light Panels.

Base Material : Barium Titanium Oxide
Binder : Nejilock NB003

This product is to be use with Nejilock NP001Phosphor Ink and Inverter with driving frequency of between 720Hz – 880Hz in order to achieve POWO EL Light properties.
Mixed Properties:

<table>
<thead>
<tr>
<th>Item</th>
<th>Results</th>
<th>Conditions</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colour</td>
<td>Pink</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solid Contents</td>
<td>60% - 70%</td>
<td>150°C</td>
<td></td>
</tr>
<tr>
<td>Viscosity</td>
<td>1.0 – 2.50 Pa s</td>
<td>Haake VT550, PK1.1° at 230 sec(^{-1}) at 25°C</td>
<td></td>
</tr>
<tr>
<td>Coverage</td>
<td>75cm(^2) per gm</td>
<td>Using 100T mesh</td>
<td>Print and Cure Twice</td>
</tr>
</tbody>
</table>

**Processing**

The Dielectric Ink must be rolled for 1 - 2 hours prior to use (i.e. using a Rock ‘n’ Roll mixer or a Tumbler mixer) to ensure product is homogenous.

**Screen Printing Equipment**  * Semi-Automatic or Manual

**Ink Screen Life**  * >3 hours

**Screen Types**  * 100T Polyester Mesh

**Typical Curing Conditions**  * Belt Dryer 135°C for 4 - 5 minutes (Depending on Dryer design)
  * Box Oven 135°C for 30 – 45 minutes (Depending on Dryer design)

**Clean Up Solvent**  * Ethoxy Propanol or Sericol

**Substrate**  * ITO coated polyester (Suggest using Nejilock’s ITO/PET Film)

**Storage**  * The product should be kept sealed, in its container, and stored at room temperature (20°C)

**Shelf Life**  * In a sealed container, stored correctly, the shelf life is minimum 6 months from despatch.

**Diluent / Thinner**  * Not Recommended

**Safety and Handling**

These inks are intended for industrial use by trained personnel. It is important for workers to avoid overexposure to chemicals contained in these products.

Read the Material Safety Data Sheet (MSDS) and product labels before using the products.

Keep product container closed when not in use to prevent solvent evaporation and spilling hazard.

The information given and the recommendations made herein are based on our research and are believed to be accurate but no guaranty of their accuracy is made. In every case, we urge and recommend that purchasers, before using any product in full scale production, make their own tests to determine to their own satisfaction whether the product is of acceptable quality and is suitable for their particular purposes under their own operating conditions.