

DuPont™ LuxPrint® 8153

ELECTROLUMINESCENT MATERIAL

Technical Data Sheet

Product Description

DuPont™ LuxPrint® 8153 electroluminescent material is designed for use with the DuPont Electroluminescent (EL) system for manufacturing screen-printed EL lamps. Barium titanate-filled LuxPrint® 8153 provides reliable electrical isolation and high dielectric constant to isolate EL Phosphors from the rear electrode. Its low affinity for moisture facilitates high light output.

Product Benefits

- Reliable electrical insulation
- Compatible with the DuPont™ Luxprint® EL System
- Low affinity for moisture
- High dielectric constant for high light output

Processing

Screen Printing Equipment

Semi-automatic and manual printers

Substrates

Polyester Film, ITO-Polyester, DuPont EL conductors and Phosphors, Glass

Screen Types

Stainless steel: 230 mesh
 Polyester: 77T-62T
 20 - 25µm emulsion

Typical Cure Conditions

Box oven: 130°C/10 min

Residence Time on Screen

2 hours

Clean up Solvent

Ethylene diacetate

Table 1
Exemplary Physical Properties
on 125µm Polyester Film

Test	Properties
Dry Layer Thickness (µm)	18 - 20
Breakdown Voltage (V/25µm)	> 500
Dielectric Constant (including phosphor)	8
Dielectric Constant (8153 only)	35
Coverage (cm ² /g/2 layers)*	> 120

Table 2
Composition Properties

Viscosity (Pa.s) [Brookfield ½RVT/spindle #14 @ 10rpm, 25°C]	10 - 20
Solids (150°C)(%)	65 - 69
Thinner	DuPont 8210

* A minimum of 2 prints is recommended

Table 1 & 2 show anticipated typical physical properties for LuxPrint® 8153 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

General

Yield and performance will depend to a large degree on the care exercised during processing, particularly in screen printing. Scrupulous care should be taken to keep the composition, printing screens and other tools free of metal contamination. Dust, lint and other particulate matter may also contribute to poor yields.

* For further information, please see Luxprint® Processing guide

Printing

Lay-down of the dielectric layer is critical to the integrity and quality of the EL lamps. The process should aim for total dry film thickness of at least 12µm per print over the thickest phosphor particle, and at least two printing passes should be employed to achieve a total minimum thickness of 25µm. Optimization of this process step will provide best reliability and light output. 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 the composition, in its container, is at this temperature prior to commencement of printing.

Thinner

This composition is optimized for printing, thinning is not normally required. Use the DuPont recommended thinner for slight adjustments to viscosity or to replace evaporation losses. The use of too much thinner or the use of a non recommended thinner may affect the rheological behavior of the material and its printing characteristics.

Compatibility

DuPont™ LuxPrint® 8153 electroluminescent material is fully compatible with other members of the DuPont LuxPrint® System and should be employed together with the recommended phosphors and conductors. While DuPont has tested this composition with the specified materials and under the recommended processing conditions, it is impossible or impractical to cover every combination of materials, customer processing conditions and circuit layouts. It is therefore essential that customers thoroughly evaluate the material in their specific situations in order to completely satisfy themselves with the overall quality and suitability of the composition for its intended application (s).

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 the Material Safety Data Sheet (MSDS).

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