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9145 Electroluminescent Silver Conductor

Polymer Thick Film Composition

All values reported here are results of experiments in our laboratories intended to illustrate product performance potential with a given experimental design. They are not intended to represent the product's specifications, details of which are available upon demand.

Product Description

9145 Silver conductor composition is designed for use with the DuPont Electroluminescent(EL) system for manufacturing screen-printed EL lamps. It is fully compatible with the phosphors, dielectrics and conductors of the system. 9145 features excellent adhesion to indium-tin oxide (ITO), and may be employed in front bus bars and contacts as well as in the rear electrode in an EL lamp build.

Key Features

- Improved printability
- Excellent adhesion to ITO film
- High conductivity for high light intensity
- Low moisture affinity
- Compatible with the DuPont EL System

Processing

- Screen Printing Equipment**
Semi-automatic and manual
- Substrates**
ITO-Polyester and Mylar Polyester Film
- Residence time on screen**
>2 Hrs
- Screen Types**
Polyester mesh PET 1000 77-48 Y PW;
20-25µm emulsion
- Typical Cure Conditions**
Box oven: 10 minutes at 130°C
Belt dryer: 90 seconds at 130°C
- Clean-up Solvent**
Ethylene Diacetate

Table 1
Composition Properties

Viscosity (Pa.s) Brookfield RVT, UC & SP (SC-4-14/6R) @ 10rpm, 25°C	20 - 100
% Solids (@ 750°C)	53 - 60
Thinner	8211
Shelf life (months)	6

Table 2
Exemplary Physical Properties
on 125µm Polyester Film

Resistivity(mΩ/□/25µm)	<50
Dry Layer Thickness(µm)	7-10
Coverage(cm²/g)	>200

General

Yield and performance will depend to a large degree on 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.

Printing

9145 silver conductor composition should be thoroughly mixed before use. Printing should be performed in a clean and well ventilated area. Additional information on requirements for printing areas is contained in DuPont Technical Guide EUT 7.3 "Processing - Screen Printing Rooms", available on request.

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 behaviour of the material and its printing characteristics. Refer to table - "Composition Properties"

Compatibility

9145 silver conductor is fully compatible with the DuPont Electroluminescent System and should be employed together with phosphors and dielectrics in that system.

Whilst 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

Containers of 9145 should be stored in a clean, stable environment at room temperature <25°C, with the container lids tightly sealed. Storage in freezers (temperature <0°C) is NOT recommended as this could cause irreversible changes in the composition. For guidance regarding storage of the composition, please consult DuPont Technical Note EUT 7.2 "Shelf Life Policy".

Shelf life

This composition has a shelf life of 6 months from date of shipment for factory-sealed (unopened) containers, stored under room-temperature conditions.

Health/Safety considerations

DuPont's polymer compositions are intended for use in an industrial environment by trained personnel. All appropriate health / safety regulations regarding storage, handling and processing of such materials should be complied with. For information on health / safety regulations please refer to the specific product MSDS and to the DuPont Safety Guide EUT 7.1 "Practical Safe Handling of Thick Film Compositions".

This information corresponds to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own experimentation. It is not intended, however, to substitute for any testing you may need to conduct to determine for yourself the suitability of our products for your particular purposes. This information may be subject to revision as new knowledge and experience become available. Since we cannot anticipate all variations in actual end-use conditions, DuPont makes no warranties and assumes no liability in connection with any use of this information. Nothing in this publication is to be considered as a license to operate under or a recommendation to infringe any patent right. **Caution: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement" H-50102.**