

# DUPONT PE825

## SILVER COMPOSITE CONDUCTOR - TECHNICAL DATA SHEET

### PRODUCT DESCRIPTION

DuPont PE825 Silver Composite Conductor is used to fabricate low-voltage circuitry, on flexible substrates including polyester film. PE825 is a highly efficient silver-bearing conductor that possesses excellent abrasion resistance, adhesion, & print resolution. DuPont PE825 is fully compatible with DuPont 8144 (overcoat carbon) and DuPont 5018 UV dielectric.

### PRODUCT BENEFITS

- High Conductivity Silver Composite Conductor
- Thermal Cure 120–140°C; 2–10 minutes
- < 25 mOhms/square/mil @ 10 µm
- Primarily for Membrane Switch Applications

### PROCESSING

#### Screen Printing Equipment

- Automatic Reel-to-Reel
- Semi-Automatic Flat-Bed
- Rotary Screen/Cylinder Screen

#### Substrates

- Polyester Film (print-treated, non-print-treated)
- Coated Papers & Nonwovens
- Rigid Epoxy or Glass

#### Screens

- 325–230 wire/inch Stainless Steel mesh
- 120–90 thread/cm Polyester mesh

#### Curing

Dry at 120–140°C oven for 2–10 minutes in a well-ventilated oven or conveyor dryer, where the exhaust meets environmental regulations. Drying efficiency, print quality/ thickness help insure best electrical & physical performance.

**Table 1 - Typical Electrical & Physical Properties**

(Printed on Melinex ST505 Polyester Film)

Test	Properties
Sheet Resistivity (mOhms/sq/25 µm) 140°C/10 min (10 µm Dried Print Thickness)	< 30
Resistivity Δ% After Crease w/5018 UV Encap (ASTM F1683, 180°, 1 cycle, No Encap 2 kg)	< 12% < 15%
Abrasion Resistance (ASTM D3363 Pencil Hardness)	2H
Adhesion (Tape Cross Hatch) (ASTM D3359 w/3M Scotch Tape 600)	No Transfer
Clean-up Solvent	Ethylene Diacetate
Overprint Carbon/Dielectric	8144/5018

**Table 2 - Typical Composition Properties**

(Printed on Melinex ST505 Polyester Film)

Test	Properties
Solids (%) @ 150°C	73–77
Viscosity (PaS) Brookfield RVT, #14 spindle, 10 rpm, 25°C	15–35
Density (g/cc)	2.6
Coverage (cm <sup>2</sup> /g @ 10 µm)	180
Coverage (cm <sup>2</sup> /g @ 15 µm)	130
Dried Print Thickness (microns)	10–15
Thinner	DuPont 8260

*This table shows anticipated typical physical properties for DuPont PE825 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.*

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### 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. Thinning is not recommended.

### SAFETY AND HANDLING

For Safety and Handling information pertaining to this product, read the Material Safety Data Sheet (MSDS).

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CAUTION: Do not use in medical applications involving permanent implantation in the human body. For other medical applications, see "DuPont Medical Caution Statement," H-50102-4.