



DUPONT™ PE671

STRETCHABLE CARBON CONDUCTOR

PRODUCT DESCRIPTION

DuPont™ PE671 is a stretchable carbon conductor paste for printed low-voltage circuitry on elastic film and textile substrates. It is compatible with polyurethane (TPU) film and select synthetic fabrics.

PRODUCT BENEFITS

- Stretchable carbon conductor
- Washable with proper encapsulation
- Compatible with wide variety of fabric and film substrates
- Compatible with lamination

PROCESSING

Screen Printing Equipment

- Automatic reel-to-reel
- Semi-automatic flat-bed
- Rotary screen/cylinder screen

Substrates

- Select synthetic fabrics
- Coated fabrics & membranes
- Thermoplastic polyurethane films

Screens

- 325 – 200 Wire/inch stainless steel mesh
- 120 – 77 Thread/cm polyester mesh

Curing

Dry at 100 – 160°C for 2 – 10 minutes in a well-ventilated oven or conveyor dryer, where the exhaust meets environmental regulations. Drying efficiency and good print quality/thickness control help ensure best electrical and physical performance.

Table 1-Typical Physical Properties

Test	Properties
Sheet Resistivity (mΩsq/25μm) (5μm Dried Print Thickness on ST505 PET Film)	<500
Resistivity After Crease (ASTM F1683, 180deg, 1 cycle, 2kg)	<5%
Abrasion Resistance (ASTM D3363 Pencil Hardness)	1H
Adhesion (Tape Cross Hatch) (ASTM D3359 w/3M Scotch Tape 600)	No Transfer
Clean-Up Solvent	Ethylene Diacetate
Encapsulant	PE771/PE773

Table 2-Typical Composition Properties

Test	Properties
Solids (%) @ 150°C	30 – 34
Viscosity (PaS) Brookfield RVT, #14 spindle, 10rpm, 25°C	40 – 75
Density (g/cc)	1.6
Coverage (cm ² /g @ 5μm)	400
Coverage (cm ² /g @ 10μm)	200
Dried Print Thickness (microns)	8 – 12
Thinner	DuPont™ 8260

Printed on Melinex ST505 Polyester Film. This table shows anticipated typical physical properties for DuPont™ PE671 based on specific experiments and is not intended to represent the product specifications. Product specifications are available upon request.

SUBSTRATE TYPES

PE671 is appropriate for many types of thermally-stable substrates in wearable electronics applications. Due to the diverse nature of potential fabrics and films that could be considered, it is not always possible to provide detailed performance guidance. For more information, please call your local DuPont representative.



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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 with DuPont™ 8260 may be desired in some cases depending on printing requirements.

SAFETY AND HANDLING

Please inform the DuPont product supplier if you intend to test PE671, alone or in combination with other materials, on human skin. For Safety and Handling information pertaining to this product, read the Material Safety Data Sheet (MSDS).

FOR MORE INFORMATION ON DUPONT™ PE671 OR OTHER DUPONT MICROCIRCUIT MATERIALS PRODUCTS, PLEASE CONTACT YOUR LOCAL REPRESENTATIVE:

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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-50102-5.

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