



DUPONT™ PE773

STRETCHABLE ENCAPSULANT FOR WEARABLES

PRODUCT DESCRIPTION

DuPont™ PE773 stretchable encapsulant is used to protect low-voltage circuitry printed on elastic film and textile substrates. PE773 is a thin, stretchable protective encapsulant that possesses excellent flexibility, adhesion, and abrasion resistance. PE773 is designed for wearable electronic applications that may require repeated washing.

PRODUCT BENEFITS

- Translucent stretchable encapsulant
- Improves wash and abrasion performance of electrical circuit
- 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 and 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 helps ensure best electrical and physical performance.

Table 1-Typical Physical Properties

Test	Properties
Conductor Resistivity Change After Crease (ASTM F1683, 180deg, 1 cycle, 2kg) (PE872 5µm dried orient thickness on Cetus® OS5000U fabric)	<5%
Flexibility Δ% After Crease over PE871 Ag (ASTM F1683, 180deg, 1 cycle, 2kg)	No Opens No Cracking
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

Table 2-Typical Composition Properties

Test	Properties
Color	Clear
Solids (%) @ 150°C	21 – 25
Viscosity (PaS) Brookfield RVT, #14 spindle, 10rpm, 25°C	40 – 80
Density (g/cc)	1.06
Coverage (cm²/g @ 5µm)	600
Coverage (cm²/g @ 10µm)	420
Dried Print Thickness (microns)	5 – 10
Thinner	DuPont™ 8260

Printed on Melinex ST505 polyester film unless stated otherwise. This table shows anticipated typical physical properties for DuPont™ PE773 based on specific controlled experiments in our labs and are not intended to represent the product specifications. Product specifications are available upon request.

SUBSTRATE TYPES

PE773 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 PE773, 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™ PE773 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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