

# DuPont™ ME201

## Carbon Conductor

### Product Description

DuPont™ ME201 is part of the DuPont suite of materials developed for In Mold Electronic applications. ME201 is a carbon conductive ink capable of withstanding thermoforming and overmolding temperatures.

### Product Benefits

- Flexible, conductive carbon composition for In Mold Electronics
- Excellent adhesion directly on Polycarbonate
- Excellent performance after thermoforming and injection molding

### Processing Conditions

#### Substrates

Polycarbonate, surface treated polyester

#### Screen Printing Equipment

Reel-to-reel, semi-automatic or manual

#### Ink Residence Time on Screen

>1 Hour

#### Screen Types

Polyester, stainless steel

#### Typical Drying Conditions

Box oven: 120°C for 20 minutes

Reel-to-reel: 120°C for 4 minutes

#### Clean-Up Solvent

Ethylene diacetate

**Table 1 - Composition Properties**

Test	Properties
Solids (%) @ 150°C	30.0 – 34.0
Viscosity (Pa.s) [Brookfield 0.5 x RVT, #14 Spindle 10 RPM, 25°C]	40 – 75
Density (g/cc)	1.6
Coverage (cm <sup>2</sup> /g @ 5µm)	400
Coverage (cm <sup>2</sup> /g @ 10µm)	200
Dried Print Thickness (µm) 8	8 – 12
Thinner	DuPont™ 3610
Shelf Life (months)	6

**Table 2 - Typical Physical Properties**

Test	Properties
Resistivity (Ω/sq/mil) (5µm Dried Print Thickness on ST505 PET Film)	≤750
Resistivity After Crease (ASTM F1683, 180°, 1 cycle, 2kg)	≤35%
Abrasion Resistance [ASTM pencil hardness]	1H
Adhesion X-Hatch	No Transfer

Tables 1 and 2 show anticipated typical physical properties for DuPont™ ME201 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

### Drying

After printing, ME201 will interact with polycarbonate if left wet for extended periods. It is therefore recommended to dry as soon as possible after printing.

Drying is a critical processing step and in order to achieve optimum performance, sufficient temperature/time should be allowed to ensure complete removal of solvent.

Dry in a well-ventilated box oven or belt/conveyor furnace. Air flow and extraction rates should be optimized to ensure complete removal of solvent from the paste. A strong air flow may help to reduce the drying temperature combination. It will also aid in achieving the lowest as-printed resistance.

## Thermoforming

Thermoforming performance of DuPont™ ME201 can vary depending on the build structure, processing conditions, thermoforming technique, and equipment used. As such, parameters need to be assessed and optimized. If more precision is needed with printed symbols and structures, high pressure forming has shown to give more accuracy as it ensures more even stretch. Forming temperatures around 160°C can be used. Stretchability >50% can be achieved.

## 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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For more information on DuPont™ ME201 or other DuPont products, please visit our website.

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