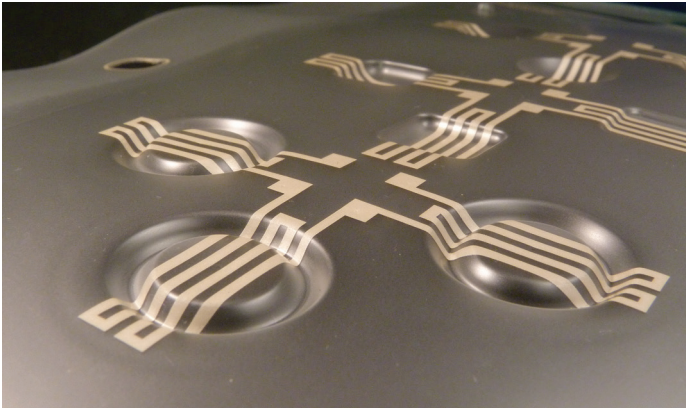




# DUPONT™ ME603

SILVER CONDUCTOR



## PRODUCT DESCRIPTION

ME603 is part of the DuPont suite of materials developed for In Mold Electronic applications. ME603 is a stretchable silver conductor capable of withstanding thermoforming and overmolding temperatures. This composition can be used for Capacitive Switch applications and interconnecting circuitry enabling fully integrated 3-dimensional functional electronic devices.

## PRODUCT BENEFITS

- Higher conductivity silver for In Mold Electronics
- Minimal/no silver show-through on graphics layer
- Excellent adhesion directly on polycarbonate and graphic inks
- Excellent performance after thermoforming and injection molding

## PROCESSING CONDITIONS

### Substrates

Polycarbonate

### 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

## Typical Circuit Line Thickness

8-12 Microns

Printed with SD 56/36 (280mesh) stainless steel or 77 – 48 PET Screen

## Clean-Up Solvent

Ethylene glycol diacetate

Table 1. Composition Properties

Test	Properties
Solids (%) @ 150°C	53.5 – 57.0
Viscosity (Pa.s) [Brookfield 0.5 x RVT, #14 Spindle 10 RPM, 25°C]	25 – 50
Thinner	DuPont™ 3610
Shelf Life (months)	6

Table 2. Typical Physical Properties

Test	Properties
Sheet Resistivity (mΩ/sq/mil)	≤30
Resistivity after Thermoforming (mΩ/sq/mil)	≤300***
Coverage (cm <sup>2</sup> /g) [using screen type 325 mesh polyester]	200
Abrasion Resistance (H) [ASTM pencil hardness]	≥H
Adhesion (B) [ASTM x-hatch, no material removal]	5

\*\*\*Results can vary some depending upon the degree of elongation after thermoforming.

Tables 1 and 2 show anticipated typical physical properties for DuPont™ ME603 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.



## DUPONT™ ME603 SILVER CONDUCTOR

### DRYING

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 ME603 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).

### FOR MORE INFORMATION ON DUPONT™ ME603 OR OTHER DUPONT MICROCIRCUIT MATERIALS, PLEASE CONTACT YOUR LOCAL REPRESENTATIVE:

#### Americas

DuPont Microcircuit Materials  
14 TW Alexander Drive  
Research Triangle Park, NC 27709  
USA  
Tel +1 800 284 3382 (calls within USA)  
Tel +1 919 248 5188 (calls outside USA)

#### Europe, Middle East & Africa

Du Pont (UK) Ltd  
Coldharbour Lane  
Bristol BS16 1QD  
UK  
Tel +44 117 931 3191

#### Asia

Du Pont Kubushiki Kaisha  
MCM Technical Lab  
DuPont Electronics Center  
KSP R&D B213, 2-1,  
Sakado 3-chome, Takatsu-ku,  
Kawasaki-shi, Kanagawa, 213-0012  
Japan  
Tel +81 44 820 7575

DuPont Taiwan Ltd  
45, Hsing-Pont Road  
Taoyuan, 330  
Taiwan  
Tel +886 3 377 3616

DuPont China Holding Company Ltd  
Bldg. 11, 399 Keyuan Road  
Zhangjiang Hi-Tech Park  
Pudong New District  
Shanghai 201203  
Tel +86 21 3862 2888

DuPont Korea Inc.  
3-5th Floor, Asia tower #726  
Yeoksam-dong, Gangnam-gu  
Seoul 135-719, Korea  
Tel +82 2 2222 5275

E.I. DuPont India Private Limited  
7th Floor, Tower C, DLF Cyber Greens  
Sector-25A, DLF City, Phase-III  
Gurgaon 122 002 Haryana, India  
Tel +91 124 409 1818

Du Pont Company (Singapore) Pte Ltd  
1 HarbourFront Place, #11-01  
HarbourFront Tower One  
Singapore 098633  
Tel +65 6586 3022

[mcm.dupont.com](http://mcm.dupont.com)

Copyright © 2015 DuPont. All rights reserved. The DuPont Oval Logo, DuPont™, and all DuPont products denoted with ® or ™ are registered trademarks or trademarks of E. I. du Pont de Nemours and Company or its affiliates.

This information corresponds to our current knowledge on the subject. It is offered solely to provide possible suggestions for your own experiments. 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 becomes available. Since we cannot anticipate all variations in 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-50102-5 K-28947 (11/15)