

# 7102 Carbon Conductive Composition

Polymer Thick Film Composition

## Product Description

Carbon 7102 is used as conductor in designs that tolerate high resistivity. Major benefits include low cost and excellent screen life and high-temp stability. It can be used with semi-automatic and manual printers. 7102 may be blended with these DuPont compositions to meet specific resistance requirements: 7082 Carbon, 5028 Ag and 3571 Dielectric.

## Product Benefits

- Low resistivity carbon
- High stability
- Superior activity in biomedical applications
- Excellent adhesion to polycarbonate substrates

## Processing

### Screen Printing Equipment

Semi-automatic or manual

### Ink Residence Time on Screen

Longer than two hours

### Screen Types

Polyester, stainless steel

### Typical Cure Conditions

Box oven: 120-130°C for 5 minutes

### Typical Circuit Line Thickness Printed with 200-mesh stainless steel screen

9-15 microns

### Clean up Solvent

Ethylene diacetate or methyl propasol acetate

Table 1  
Typical Physical Properties on 5-mil Polyester Film

Sheet Resistivity ( $\Omega$ /sq/mil)	20-30
Resistivity after Flex( $\Omega$ /sq/mil) 15 sec after test Crease (180°C, 1 cycle)	50
Abrasion Resistance, Pencil Hardness (H) (ASTM D3363-74)	2 H
Solder	Not Recommended

Table 2  
Composition Properties

Viscosity (Pa.S) (Brookfield HBT, 10 rpm #14 spindle&UC, 25°C)	60-125
Solids (150°C) (%)	34.5-37.5
Coverage	16 in <sup>2</sup> /g/mil 103 cm <sup>2</sup> /g/mil
Thinner	3610

## Storage and Shelf Life

DuPont thick film polymeric compositions should be stored at ambient temperatures. Shelf life of material in unopened containers is six months from date of shipment. Some settling of solids may occur, so compositions should be stirred thoroughly before use.

## Safety and Handling

This product contains organic solvent and materials. The following precautions should be exercised when handling 7102:

- Use with adequate ventilation
- Avoid prolonged contact with skin
- Avoid prolonged breathing of vapor
- If contact with skin occurs, wash affected area immediately with soap and water
- Dangerous if swallowed — DO NOT CONSUME
- Refer to MSDS for more details

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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

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