

DuPont 5028

SILVER CONDUCTOR

Technical Data Sheet

Product Description

DuPont 5028 silver conductor is used to fabricate low-voltage circuitry, especially on flexible substrates. This composition is particularly suited for applications requiring high conductivity and/or fast curing. It can be used with reel-to-reel, semiautomatic, and manual printers, and offers excellent residence time on the screen.

Product Benefits

- Excellent conductivity

Processing

- **Screen Printing Equipment**
Reel-to-reel, Semi-automatic, manual
- **Ink Residence Time on Screen**
>1 hours
- **Screen Types**
Polyester, stainless steel
- **Typical Cure Conditions**
Box oven: 120 - 130°C for 6 minutes
Reel-to-reel: 140°C for 1-1.5 minutes
- **Typical Circuit Line Thickness Printed with 325-mesh Stainless Steel Screen**
8-10 microns
- **Clean up Solvent**
Ethylene glycol diacetate
- **Substrate**
Polyester, paper, epoxy glass

Table 1
Typical Physical Properties
On 5-mil Polyester Film

Test	Properties
Sheet Resistivity (mΩ/sq/mil @25μm thickness)	≤ 12
Resistivity after Flex (mΩ/sq/mil) 15 sec after test Crease (180°, 1 cycle)	<100
Abrasion/Tape Pull (3M Scotch Tape #600)	No Ag Transfer
Abrasion Resistance, Pencil Hardness (H) (ASTM D3363-74) [H]	≥ 2
Operating Use Temperature (°C)	≤ 110
Solderability	Not Recommended
Change in Physical Properties After Environmental Test†	Insignificant
Change in Electrical Properties After Environmental Tests† [%]	< 10
†Environmental Tests Thermal Shock (+85°C to -40°C, 30 min, each, 5 cycles) Dry Heat (+85°C, 20 days) Humidity (+60°C, 95% RH, 1,000 hr) [MIL Standard 202E, method 103, cond. A] Salt Spray (+35°C, 5% salt, 10 days) [ASTM B117] Silver Migration (1V DC/mil gap, +40°C, 90% RH, 500 hr, tested on 40- and 7-mil gaps) Sulfur Dioxide (+45°C, 90% RH, 500 hr in a 9-liter chamber containing 500 mg of flowers of sulfur)	

Table 1 & 2 show anticipated typical physical properties for DuPont 5028 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Table 2
Composition Properties

Test	Properties
Viscosity (Pa.S) [Brookfield HBT, 10 rpm #14, 25°C]	15 - 30
Solids (150°C) [%]	69 - 71
Coverage (cm ² /g) [Dependent on print thickness]	230 - 320
Thinner	DuPont 3610

Dry

Dry and cure in a well ventilated oven or conveyor dryer where the exhaust meets environmental regulations.

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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