



DuPont™ Solamet® PV430

photovoltaic metallization

Technical Data Sheet

Product Description

DuPont™ Solamet® PV430 photovoltaic metallization is a solderable composition formulated with silver-coated copper powder for enhanced solderability and leach resistance. It can be used to create additive circuitry, and termination sites on a wide variety of Thin Film Photovoltaic substrates.

Product Benefits

- Excellent solderability and leach resistance
- Strong adhesion to a wide variety of substrates
- Excellent printing properties

Processing Summary

- **Screen Printing Equipment**
Semi-automatic, manual
- **Substrate**
Epoxy glass, phenolic paper, DuPont™ Kapton® polyimide, glass ceramic
- **Ink Residence Time on Screen**
24 hours
- **Screen Type**
Stainless steel, nylon μm emulsion build up
- **Typical Cure Conditions**
Box Oven: 170°C (338°F) for 30 min
- **Typical Circuit Line Thickness Printed with 200-mesh stainless steel screen**
25–30 μm
- **Clean up Solvent**
Thinner DuPont 9245, Arcosolv PNP, Ethylene Diacetate

All values reported here are results of experiments in our laboratories intended to illustrate product performance potential with a given experimental design. They are not intended to represent the product's specifications, details of which are available upon demand.

Table 1

Test	Properties
Sheet Resistivity ($\text{m}\Omega/\text{sq}$) (at 25 μm thickness)	65–75
Adhesion/Tape Pull (3M Scotch Tape #600)	No Material Transfer
Abrasion Resistance, Pencil Hardness (H) (ASTM D3363-74)	>5
Solderability ¹ (%)	100
Change in Electrical Properties after Environmental Test	
Thermal Aging (85°C, 2000 hr)	$\Delta R < 30\%$
Heat/Humidity (60°C/95% RH/3000hr)	$\Delta R < 30\%$
Thermal Cycling (-55 \leftrightarrow 125°C, 500 cycles)	$\Delta R < 20\%$
Solder Dip (260°C, 10 sec, 3 cycles)	$\Delta R < 10\%$
Change in Physical Properties After Environmental Tests	Insignificant

¹With eutectic or most other solders and mildly activated flux.

Table 2: Composition Properties

Viscosity (Pa·s) (Brookfield RVT, 10 rpm UC&SP, 25°C)	65–75
Coverage, cm^2/g	100–120
Thinner	DuPont 9245

Storage and Shelf Life

Containers may be stored, tightly sealed, in a clean, stable environment at 0–5°C. Shelf life of material in unopened containers is three months from date of shipment. Some settling of solids may occur and compositions should be thoroughly mixed prior to use.

Safety and Handling

For information on health and safety regulations please refer to the specific product MSDS.

For more information on DuPont™ Solamet® PV430 photovoltaic metallization or other DuPont Microcircuit Materials, please contact your local representative:

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