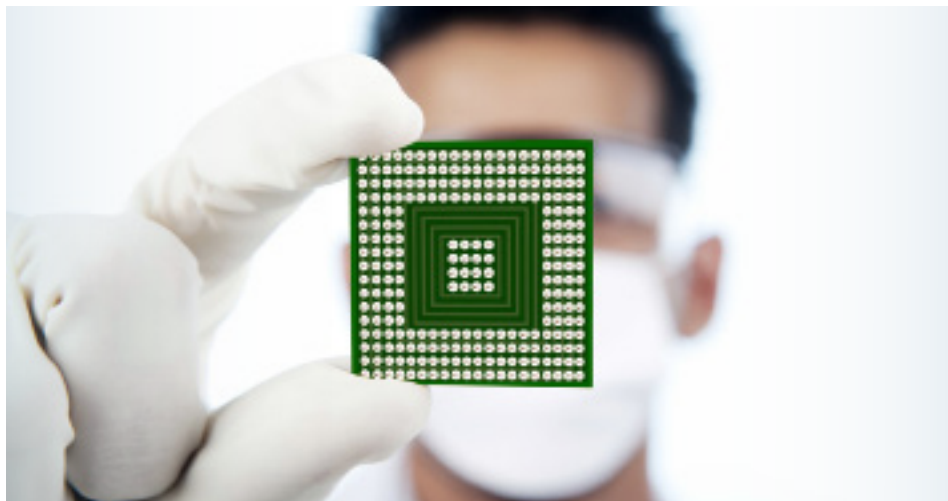


Xerox Dielectric Coating Solution

Product Code: xdi-dcs



Xerox dielectric material is a solution processable dielectric coating which yields uniform thin films exhibiting high capacitance.

TECHNOLOGY

- Solution coated dielectric with demonstrated performance in bottom-gate organic thin film transistors
- Coating solution yields thin, uniform films
- Low surface roughness
- Free of pinholes

DIELECTRIC SOLUTION CHARACTERISTICS

Viscosity (at 25°C)	8 – 10 cps
Surface Tension	24 – 25 mN/m
Solids Loading	12 – 13%
Solvent System	organic
Cure (thermal, in air)	140°C / 30 minutes
Storage	room temperature
Shelf-life	up to two months

MATERIALS PERFORMANCE

Capacitance	6 – 9 nF/cm ²
Dielectric Constant	3-5
Dielectric Strength	>1x10 ⁸ V/m
Thickness After Cure	400 – 600 nm
Surface Roughness	< 10 nm

Test samples were prepared by spin coating xdi-dcs (2000 rpm, 60 s) onto a conductive substrate, dried at 80°C for 10 minutes, and cured at 140°C for 30 minutes. 60 nm gold electrodes were evaporated onto the cured dielectric.

PRINTING CONDITIONS

Aerosol Jet: Traces were printed on PC substrates using an Optomec Sprint system with a pneumatic atomizer. Stable mass output was achieved using the following conditions: 250 µm nozzle, 150 sccm sheath gas, 75 sccm push gas (N₂).

Inkjet: Traces were printed using a Dimatix DMP 2800 printer. 5 ng drops with drop velocity of 3 m/s at a voltage of 23 V with a 40 µm drop spacing were deposited on glass substrate.

ENGAGE US

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Xerox Research Centre of Canada

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