

# DuPont Microcircuit Materials

THICK FILM COMPOSITION

## Interra™ EP101 X-Ray Fiducal Paste

### Product Description

EP101 X-Ray fiducial paste is used to print fiducials on copper foils for use in registering layers during the innerlayer lamination process for burying passive components within printed circuit boards.

### Product Benefits

- Easy to screen or stencil print.
- Cofirable with resistor and capacitor materials.
- High density for ease of identification with X-Ray drilling equipment.

### Processing

#### Substrates

Copper foil, PLSP grade ED (electrodeposited) copper is recommended.

#### Printing

230 mesh stainless steel screen with 0.5 mil thick emulsion or a 2-mil stencil. Target print thickness of 15 microns or greater.

#### Drying

120°C for 10 minutes.

#### Firing

Cofire with ceramic capacitor elements on copper foil at approximately 950°C in nitrogen with 10 minutes at peak temperature. See *DuPont Embedded Passives Processing Guidelines* for more details.

### Composition Properties

Test	Properties
Viscosity (Pa.S) [Brookfield HAT, 10rpm, SC4-14/6R]	300 - 400
Solids (%) [150°C/2hr/air]	> 83
Fineness of grind, µm 4th scratch/50% point	8/5
Thinner *	9450

\*Do not add more than 5% by weight, otherwise density of printed fiducials may drop below visible range.

Table 1 shows composition properties for EP101

### Typical Physical Properties

Test	Properties
Paste Usage (gms/foil)	0.1 - 0.2
Paste Density (unfired)[gms/cm³]	4.0

Table 2 shows typical physical properties for EP101

## 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

The following precautions should be exercised when handling EP101:

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

For more information on EP101 or other DuPont Microcircuit Materials products, please contact your local representative:

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