



DUPONT™ PE410

INK-JET SILVER CONDUCTOR

PRODUCT DESCRIPTION

PE410 is a new silver ink-jet ink from DuPont Advanced Materials enabling rapid digital prototyping and high volume production in applications with demanding requirements for conductivity, thickness, smoothness and line resolution. PE410 ink-jet silver ink displays the stable jetting performance needed for high volume non-contact, digitally printed metallizations in applications such as touch panels, solar cells, OLED lighting and printed antennae. PE410 has a low sintering temperature suitable for printing on PET and shows good chemical compatibility and adhesion on multiple surface types or organic layers.

PRODUCT BENEFITS

- Outstanding electrical conductivity
- Good jet performance and ease of use
- High print thickness for ink-jet process
- Excellent adhesion to various substrates
- Smooth sintered surface

PROCESSING CONDITIONS

Substrates

- PET (eg. Melinex® ST504), Glass, PEN, ITO

Ink-Jet Printing Equipment

- PiXDRO LP50 with Konica Minolta print head (512S)
- FUJIFILM Dimatix Material Printer

Handling Recommendation

- Shake well before use
- If sedimentation occurs, jar roll for 60 minutes or planetary centrifugal mix for 10 seconds at 2000 rpm

Typical Drying Conditions

- Box Oven: 130°C for 20 minutes (substrate dependent, see table)

Typical Circuit Line Thickness

- Printed with DMCLCP 10 pl with drop spacing 30
 - ~ 500 nm for 1 px line
 - ~ 1.5 µm for 20 px line

Table 1. Composition Properties

| Test | Properties |
|---|------------|
| Solids (%) @ 150°C | 45.2 |
| Viscosity (cP) [Bohlin, cone and plate 1°, 40 mm, 25°C] | 20 – 40 cP |
| Color | Dark brown |
| Shelf Life (months) [Refrigerated ≤ 5°C] | 3 |

Table 2. Physical Properties

| Test | Properties |
|--|--------------|
| Resistivity (mΩ/sq/25µm) | ≤ 5 at 130°C |
| | ≤ 4 at 150°C |
| | ≤ 3 at 190°C |
| Abrasion Resistance (H) (ASTM Pencil Hardness) | 3 |

Tables 1 and 2 show anticipated typical physical properties for DuPont™ PE410 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Printing should be performed in a clean, well-ventilated area. Optimum printing characteristics are generally achieved when the room and ink container temperatures are in the 20 – 23°C range.



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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-50102-5 K-29312 4/16)