

DuPont CB102

CONDUCTIVE VIA PLUG PASTE

Technical Data Sheet

Product Description

DuPont CB102 silver conductive via plug paste is used to provide high conductivity plateable vias for Plastic ball grid array (PBGA), buried via and sequential build-up board (SBU). DuPont CB102 offers greater flexibility and processing latitude for filling small diameter holes and can be applied to thin PWB's. The improved processing capabilities allow DuPont CB102 to fill vias without the need of vacuum assistance.

Product Benefits

- High thermal conductivity allows use of drilled, filled vias as heat sinks improving thermal management
- Strong adhesion to copper and most laminate materials provides increased reliability
- Solvent-less composition provides broader curing window and reduced curing time.
- Simple application of material using screen printing techniques (160 -280 mesh screen) reduces processing steps with minimal capital investment.
- Close CTE to board material (FR-4, BT resin) increases reliability
- High electrical conductivity of filled, buried vias allows reduced layer count and processing steps.
- No shrinkage, one part epoxy system provides reliability, planarization and ease of use.
- Solderability after plating provides increased use of board real estate by allowing via in pad technology

Processing

Screen Printing Equipment

Semi-automatic or manual printer. No vacuum assist required. Mesh screen or stencil can be used

Table 1
Typical Physical Properties

Test	Properties
Bulk Resistivity (Ω/cm^3)	1.8×10^{-4}
Abrasion Resistance, Pencil Hardness (H) (ASTM D3363-74)	3 - 4
Specific Gravity (gt/cm^3)	4.8
Viscosity (Pa.s) (Brookfield HBT, 10 rpm, 25°C)	85
Thermal conductivity (W/mK)	3.27
Thinner	None
Platability (Cu plating)	Good in Electrolytic (<i>Ni/Au electrolytic plating possible</i>)

This table shows anticipated typical physical properties for DuPont CB102 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Substrates

Epoxy glass, BT resin

Ink Residence Time on Screen

>1 hr

Screen or Stencil Types

160-280 stainless steel or polyester mesh screen or 3 - 4 mil stainless steel stencil recommended

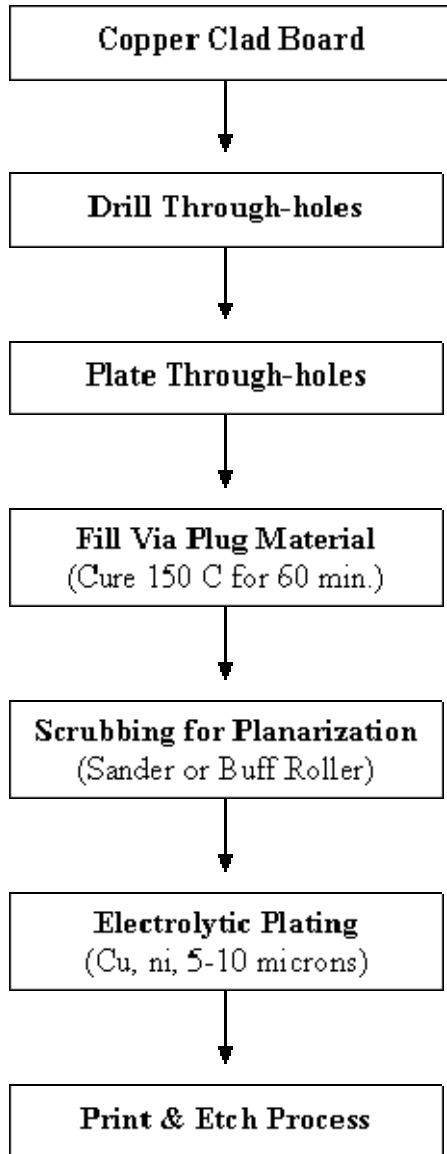
Typical Cure Conditions

150 deg C for 60 minutes

Clean up Solvent

Axarel®, Isopropanol, Ethylene diacetate

Process Recommendations



Environmental Properties

Glass Transition Temperature		
DMA 1 Hz		147° C
DMA 10 Hz		153° C
Thermal Expansion		
TMA a1		40 ppm
TMA a2		60 ppm
Solder Resistance		
260°C/ 20 sec, 2X		No Change
Chemical Resistance		
10% H ₂ SO ₄		No Change
10% NaOH		No Change
Water Absorption		
Boiling water, 1hr		0.037 (wt%)
DI water, 23° C, 24 hrs		0.0006 (wt%)
PCT 121C, 100% RH 24 hrs		0.41 (wt%)
Out Gassing: Test Method ASTM E595		
Sample I.D.	% TML (Total Mass Loss)	% CVCM (Collected volatile condensable material)
CB102	0.059	0.026
TML is well below the normal acceptance of 1.0% CVCM is below the normal acceptance level of 0.10%		



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Storage and Shelf Life

Containers should be stored, tightly sealed, in a clean, refrigerated environment (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 Safety and Handling information pertaining to this product, read the Material Safety Data Sheet (MSDS).

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