



DUPONT™ TC501

GOLD COFIREABLE VIA FILL

PRODUCT DESCRIPTION

DuPont™ TC501 is a gold via fill compatible with DuPont™ Green Tape™ 951 low temperature co-fired ceramic system. DuPont™ TC501 is ideally suited to applications requiring high conductivity, reliable interconnection between gold conductors.

PRODUCT BENEFITS

When used with Green Tape™ 951 and compatible conductor pastes, DuPont™ TC501 offers the following benefits:

- High reliability, high conductivity metallization
- High circuit density
- Stacked/thermal or routing vias
- Cofired processing

PROCESSING

Design

For detailed recommendations on use of Green Tape™ 951 and conductors such as DuPont™ TC501, see the Green Tape™ 951 Product Data Sheet. For compatible thick film compositions and their recommended use see the Green Tape™ 951 Product Selector Guide.

Thinning

Thinning thick film compositions is not recommended as material is supplied formulated for optimal performance. Improper thinning may affect printing characteristics. Thinner may be added to replenish solvent lost during normal usage but care should be taken to not over-thin

Printing

The composition should be thoroughly mixed before use. This is best achieved by slow, gentle, hand stirring with a clean burr-free spatula (flexible plastic or stainless steel) for 1-2 minutes. Care must be taken to avoid air entrapment.

Printing should be performed in a clean and well-ventilated area. Optimum printing characteristics are generally achieved in the room temperature range of 20-23°C. Viscosity, and therefore printability, of thick film compositions can be affected by ambient temperatures.

Composition Properties

Test	Properties
Clean-Up Solvent	1-Propoxy-2-Propanol
Coverage, cm ³ /g	0.15
Viscosity (Pa.s) [Brookfield HBT, UC&SP @1 rpm after 3 min settling time)	3,500 – 4,500
Thinner	DuPont™ 9450
Via Diameter Resolution	100 mm
Fired Resistivity (at 25mm fired thickness)	<5 mW/sq

This table shows anticipated typical physical properties for DuPont™ TC501 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Form vias in unfired 951 Green Tape. The preferred method for via fillings is use of stencil masks and screen printing methods. A vacuum stone or other support structure that uniformly distributes vacuum to the 951 green sheet is recommended.

Drying

Dry in air in a well-ventilated oven or conveyor dryer for 5 minutes at 120°C. Do not over-dry. See Safety & Handling section for additional information.

Lamination and Firing

Laminate multiple sheets of the DuPont™ GreenTape™ 951 low temperature co-fired ceramic system into which TC501 has been printed according to processing parameters detailed in the Green Tape™ 951 Design Guide and on the Green Tape™ 951 Product Data Sheet. Consult these documents as well for details of the recommended Green Tape™ 951 firing profile for belt or box air furnaces.

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.



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SAFETY AND HANDLING

For Safety and Handling information pertaining to this product, read the Material Safety Data Sheet (MSDS).

FOR MORE INFORMATION ON DUPONT™ TC501 OR OTHER DUPONT MICROCIRCUIT MATERIALS, PLEASE CONTACT YOUR LOCAL REPRESENTATIVE:

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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-29422 (03/17)