DUPONT™ TC502

CONDUCTOR PASTE

PRODUCT DESCRIPTION

DuPont™ TC502 is a wire bondable gold composition designed for DuPont™ GreenTape™ 951 low temperature co-fired ceramic system. This composition is cadmium and lead free*. DuPont TC502 can be used as an external wire bondable composition as well as an internal signal line conductor.

PRODUCT BENEFITS

- Cadmium and lead free*
- High conductivity
- Wire bondable with 1 and 2 mil gold wire
- Good bondability on fine pitch lines
- Low distortion
- Cofired processing

* Cadmium and lead "free" as used herein means that these are not intentionally added to the referenced product. Trace amounts however may be present.

PROCESSING

Application

DuPont™ TC502 can be processed according to the Green Tape™ 951 design guide and data sheet instructions. No special considerations are needed in the design and use of this product.

Printing

DuPont™ TC502 should be printed to approximately 15±2 microns dried thickness for optimal bond adhesion. This can be accomplished using a 325 mesh, 12mm screen. Thoroughly stir the composition before use using a slow gentle hand movement with a burr free spatula. Take care not to entrap air during stirring. Thinning is not recommended for this composition since printing characteristics may change with rheology changes. Thinner can, however, be used to replenish lot solvent.

Printing should be performed in a clean, well-ventilated area. Optimal printing is achieved at a room temperature of 20-23°C. Rheology and printing characteristics can change with temperature variations. Print DuPont TC502 directly onto unfired Green Tape™ 951 using a vacuum stone or other support structure.

Typical Physical Properties

Test	Properties
Solids (%)	84 - 86
Viscosity (Pa.s) [Brookfield RVT, UC&SP @ 10 rpm, 25°C)	150 - 275
Thinner	8250
Dried Line Resolution (µm)	125/125
Dried Thickness (µm)	15
Wirebond Adhesion 1 mil Au, Initial (g) 2 mil Au, Initial (g)	 >9 >35

This table shows anticipated typical physical properties for DuPont™ TC502 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Typical Drying Conditions

After printing, parts should be dried in a well-ventilated oven or conveyor for five minutes at 120°C. Do not over-dry. See Safety & Handling section for further information.

Lamination and Firing

After printing and drying, multiple green sheets can be laminated together to form a circuit according to the process parameters discussed in the DuPont™ GreenTape™ 951 low temperature co-fired ceramic system Design Guide. The Design Guide also has more detail on box and belt firing profiles.

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

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

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FOR MORE INFORMATION ON DUPONT™ TC502 OR OTHER DUPONT MICROCIRCUIT MATERIALS, PLEASE CONTACT YOUR LOCAL REPRESENTATIVE:

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