

DuPont 6138

SILVER/PALLADIUM COFIREABLE VIA FILL

Technical Data Sheet

Product Description

DuPont 6138 is a silver/palladium transition via fill compatible with DuPont™ GreenTape™ 951 low temperature co-fired ceramic system. DuPont 6138 is ideally suited to applications requiring high conductivity, reliable interconnection between mixed metallurgy (Au and Ag) conductors for lower cost.

Product Benefits

When used with GreenTape™ 951 and compatible via fill pastes, DuPont 6138 offers the following benefits:

- High reliability
- High yields
- High circuit density
- Enable low unit costs through mixed metallurgy
- Cofire processing

Processing

Design

For detailed recommendations on use of GreenTape™ 951 and conductors such as DuPont 6138, see the GreenTape™ 951 Product Data Sheet. For compatible thick film compositions and their recommended use see the GreenTape™ 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.

Composition Properties

Test	Properties
Clean-up Solvent	1-Proxy-2-Propanol
Recommended Thinner	DuPont 9450
Coverage, cm ² /g	0.18
Viscosity (Pa.S) [Brookfield HBT, utility cup & spindle, 10rpm @25°C]	1500 - 2800
Typical Properties	
Via Diameter Resolution (µm)	125
Fired Resistivity ² (mΩ/sq)	< 10
¹ Calculated at a wet thickness of 25µm	

Table 1 & 2 show anticipated typical physical properties for DuPont 6138 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Drying

Dry in air in a well-ventilated oven or conveyor dryer for 5 minutes at 120°C. Do not over-dry.

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.

Form vias in unfired DuPont™ GreenTape™ 951 low temperature co-fired ceramic system. The preferred method for via filling is use of stencil masks and screen printing methods. A vacuum stone or other support structure that uniformly distributes vacuum to the GreenTape™ 951 green sheet is recommended.

Lamination and Firing

Laminate multiple sheets of GreenTape™ 951 onto which DuPont 6138 has been printed according to processing parameters detailed in the GreenTape™ 951 Design Guide and on the GreenTape™ 951 Product Data Sheet. Consult these documents as well for details of the recommended GreenTape™ 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.

Safety and Handling

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

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