

DuPont 5742

GOLD COFIREABLE CONDUCTOR

Technical Data Sheet

Product Description

DuPont 5742 is a gold conductor compatible with DuPont™ GreenTape™ 951 low temperature co-fired ceramic system. DuPont 5742 can be used as an internal or external conductor for all gold systems or as an external conductor on traditional mixed metal systems. 5742 is wire bondable with 1 mil Au and 1 mil Al wires.

Product Benefits

When used with GreenTape™ 951 and compatible via fill pastes, DuPont 5742 offers the following benefits:

- High reliability
- High conductivity metallization
- High circuit density
- Au and Al wire bondable (1 mil)
- Cofire processing

Processing Design

For detailed recommendations on use of GreenTape™ 951 and conductors such as DuPont 5742, 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 8250
Coverage ¹ , cm ² /g	80 - 90
Solids (750°C) [%]	79.5 - 81.5
Viscosity (Pa.S) [Brookfield HBT, utility cup & spindle, 10rpm @25°C]	100 - 180
Typical Properties	
Dried Line Resolution (µm) lines/space	125/125
Dried Thickness (µm)	13 - 18
Fired Thickness (µm)	6 - 12
Fired Resistivity ² (mΩ/sq)	< 5
Typical Wire Bonding Properties	
1mil Au, Initial (g)	> 9
1mil Au, Aged ³ 1000 hr (g)	> 9
1mil Al, Initial (g)	> 9
1mil Al, Aged ³ 1000 hr (g)	> 8
¹ Calculated at a wet thickness of 25µm ² At 9µm fired thickness ³ Aged at 150°C	

Table 1, 2 & 3 show anticipated typical physical properties for DuPont 5742 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

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.

Print DuPont 5742 directly onto unfired DuPont™ GreenTape™ 951 low temperature co-fired ceramic system using thick film printing methods and a vacuum stone or other support structure that uniformly distributes vacuum. A 325 mesh stainless steel screen with 12 µm emulsion is standard.

Drying

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

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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