

# DuPont 6145

SILVER Cofireable Conductor

## Technical Data Sheet

### Product Description

DuPont 6145 is a silver conductor compatible with DuPont™ GreenTape™ 951 low temperature co-fired ceramic system. DuPont 645 is ideally suited to applications requiring high conductivity,.

### Product Benefits

When used with GreenTape™ 951 and compatible via fill pastes, DuPont 6145 offers the following benefits:

- High reliability
- High yields
- High circuit density
- Low cost, high conductivity metallization
- High frequency performance
- Cofire processing

### Processing

#### Design

For detailed recommendations on use of GreenTape™ 951 and conductors such as DuPont 6145, 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 <sup>1</sup> , cm <sup>2</sup> /g	90
Solids (750°C)[%]	85.7 - 87.5
Viscosity (Pa.S) [Brookfield HBT, utility cup & spindle, 10rpm @25°C]	120 - 200
Typical Properties	
Dried Line Resolution (µm) lines/ spaces	125/125
Fired Thickness (µm)	18 - 25
Fired Resistivity <sup>2</sup> (mΩ/sq)	< 3
<small><sup>1</sup> Calculated at a wet thickness of 25µm <sup>2</sup> At 18µm fired thickness</small>	

Table 1 & 2 show anticipated typical physical properties for DuPont 6145 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.

Print DuPont 6145 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 to the GreenTape™ 951 green sheet is recommended. A 325 mesh stainless steel screen with 12µm emulsion is standard.

## Lamination and Firing

Laminate multiple sheets of GreenTape™ 951 onto which DuPont 6145 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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