

# DuPont 8453

POLYMERIC SILVER TERMINATION

## Technical Data Sheet

### Product Description

DuPont 8453 is a polymeric, dippable plating base that provides a flexible stress buffer for plated component terminations. DuPont 8453 has been designed for a lower add on than DuPont 8452 and to give excellent bend strength and thermal shock resistance in surface mounted applications. The product may be used with a variety of dielectrics, and usually will be applied over a fired on silver or copper under-layer. The user must determine the compatibility in specific applications.

### Product Benefits

- Excellent dipping cosmetics
- High thermal shock stability
- Excellent plating performance
- Good green strength
- Processed though heat cure

### Processing

#### Paste Preparation

DuPont 8453 termination 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 minute. Note: optimum dipping characteristic of DuPont 8453 termination composition are generally achieved in the temperature range 20°C - 23°C. It is therefore important that the material, in its container, is at this temperature prior to commencement of printing.

### Composition Properties

Test	Properties
Solids (%)	54 - 58
Viscosity (Pa.S) Brookfield RVT, UC&SP SC4-14/6R @ 10 rpm, 25°C	18 - 28
Thinner	DuPont 8392

This table shows anticipated typical physical properties for DuPont 8453 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

### Application

DuPont 8453 termination composition can be applied by Palomar type dipping or by ChipStar type dipping. It is applied to ceramic component bodies. If necessary a blotting step can be used to control the paste deposit. Dipping should be carried out in a clean, well-ventilated area.

### Undercoat

In order to achieve optimum contact to inner electrodes, it is recommended to apply a thin fired silver undercoat to the bodies prior to the application of the DuPont 8453.

### Drying

DuPont 8453 polymeric termination should be dried for 3 minutes at 130 - 150°C in a well-ventilated oven, or belt dryer.

### **Curing DuPont 8453**

DuPont 8453 polymeric termination does not need to be fired. However, it does require a curing step to achieve optimum performance. It can be cured in a box. It is essential that the air supply to the oven is clean, dry, and free of contaminants. DuPont 8453 polymeric termination is best cured for 1 hour at a temperature of 200°C. Variation in the curing temperature and/or time at the temperature may result in variation in the final properties

### **Dry/Cure Process Sequence**

Dip 1st end of ceramic body with DuPont 8453.  
Dry as recommended.

Dip 2nd end of ceramic body with DuPont 8453.  
Dry as recommended.

Remove ceramic bodies from carrier plate.  
Cure as recommended.

### **Dry/Cure Process Sequence**

Dip 1st end of ceramic body with DuPont 8453.  
Dry as recommended

Dip 2nd end of ceramic body with DuPont 8453.  
Dry as recommended.

### **Electroplating**

Chips terminated with DuPont 8453 and processed as recommended can be electroplated in conventional processes.

### **General**

Yield and performance will depend to a large degree on the care exercised during processing, particularly in the dipping state. Scrupulous care should be taken to keep DuPont 8453 termination composition, the dipping equipment and other tools free of metal contaminants. Dust, lint and other particulate matter may also contribute to poor yield.

### **Thinner**

DuPont 8453 termination composition is optimized for dipping for the most commonly used chip sizes, thinning is not normally required. However, thinning maybe required when DuPont 8453 is used on the larger chip sizes, customers need to determine the optimum conditions for their applications. Use the DuPont recommended thinner for slight adjustments to viscosity or to replace evaporation losses. The use of too much thinner or the use of a non recommended thinner may affect the rheological behaviour of the material and its printing characteristics.

### **Storage**

Containers of DuPont 8453 termination composition may be stored in a clean, stable environment at temperature of between 1-4°C, with their lids tightly sealed. Storage in freezers (temperature <0°C) is NOT recommended as this could cause irreversible changes in the material.

### **Shelf Life**

DuPont 8453 termination composition has a shelf life of 3 months from date of shipment, for factory-sealed (unopened) containers, when stored under recommended conditions.

### **Safety and Handling**

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



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