

# DuPont 7484F

## PALLADIUM/SILVER CONDUCTOR

### Technical Data Sheet

#### Product Description

DuPont 7484F palladium/silver conductor composition is intended to be applied to ceramic substrates by screen printing and fired in a conveyor furnace in an air atmosphere to form interconnection tracks and pads for component and lead attachment, in hybrid microcircuits and networks.

#### Product Benefits

- Excellent fine line resolution
- Thin, dense fired films
- Limited spreading after printing
- Fireable on 30 or 60 minutes 850°C profiles
- Excellent solderability on Alumina, DuPont 5704 Dielectric and DuPont QM44
- Excellent aged adhesion on Alumina, DuPont 5704 Dielectric and DuPont QM44

#### Design Notes

When processed under recommended conditions, DuPont 7484F causes no significant shifts in resistivity or TCR when used to terminate DuPont 1900 and DuPont QS80 series resistors. DuPont 7484F is compatible with DuPont 5704 dielectric when separately fired. Cofiring of DuPont 7484F on top of DuPont 5704 is not recommended. Overlaps of DuPont 7484F Pd/Ag with DuPont 6160 Ag on top of DuPont 5704 dielectric: depending on the sequence and the number of firing some blistering may occur. Overlaps of DuPont 7484F with DuPont 5723 Au on top of DuPont 5704: print DuPont 7484F over DuPont 5723 to avoid blistering.

#### Drying

Allow prints to level for 5-10 minutes at room temperature followed by drying for 10-15 minutes at 150°C in a well ventilated oven or conveyor dryer.

#### Typical Physical Properties

Test	Properties
Viscosity (Pa.s) (Brookfield HBT 5X Cone and Plate, [#51 cone], 1rpm, 25°C)	300 - 410
Coverage (cm <sup>2</sup> /g) Based on fired thickness of 11µm	85 - 95
Shrinkage (%) Wet to Dry Dried to Fired	≈ 40 ≈ 50
Thinner	DuPont 7502

#### Typical Fired Conductor Properties

Fired Thickness (µm)	8 - 13
Print resolution <sup>1</sup> (x1 firing) [lines/space µm]	≥ 100
Resistivity on alumina (mΩ/sq) [@12 µm fired thickness]	15 - 30
Solder Acceptance <sup>2</sup> (%) 62Sn/36Pb/2Ag @ 220°C	≥ 96 Coverage
Solder Leach Resistance 62Sn/Pb/Ag @ 230°C	≥ 7 cycles
Adhesion (x5 firings) <sup>3</sup> [N] Initial Aged 1000hrs @150°C	≥ 20 ≥ 20

<sup>1</sup> Finest lines are best achieved using a 200 or 290 threads per inch mesh screen with 20 µm diameter wires.

<sup>2</sup> Using Alpha 611 flux. Solder coverage measured after a 5s dip in solder. A leaching cycle is represented by a 10 s dip in solder and tested um lines.

<sup>3</sup> 90° wire peel test on 2mm x 2mm pads soldered with 62Sn/36Pb/2Ag solder at 220°C and using mildly-activated, Alpha 611.

This table show anticipated typical physical properties for DuPont 7484F based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

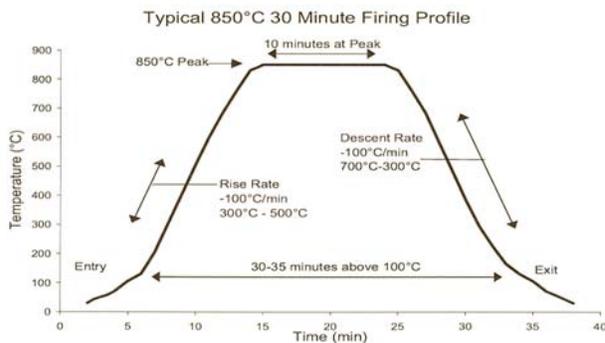
## Printing

Conductor compositions DuPont 7484F should be thoroughly mixed before use. This is best achieved by slow, gentle, hand stirring with a clean, burr-free spatula (flexible plastic) for 1-2 minutes. Care must be taken on avoid air-bubble entrapment. Printing should be carried out in a clean, well-ventilated area. A 325-mesh stainless steel screen with a 12µm emulsion thickness is normally suggested. 200 mesh screens, can be used but will result in greater fired thickness.

Note: Optimum printing characteristics of DuPont 7484 are generally achieved in the temperature range 20-23°C. It is therefore important that the material, in its container, is at this temperature prior to printing.

## Firing

Fire in a well ventilated belt or conveyor furnace, in air with a 30 or 60 minute cycle to a peak temperature of 850°C.



## 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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