

DuPont LF181

SILVER VIA FILL CONDUCTOR COMPOSITION

Technical Data Sheet

Product Description

DuPont LF181 is a via fill conductor which is part of System LF lead free* materials. It is intended to be applied to ceramic substrates by screen printing and fired in a conveyor furnace in air (oxidizing) atmosphere, to form interconnecting vias in buried dielectric layers.

Product Benefits

- Lead, Cadmium, Chromium and Nickel Free*
- Suitable to fill two dielectric layers in one print
- Minimal shrinkage dried to fired

*Cadmium, lead, chromium and nickel "free" as used herein means that these are not intentionally added to the referenced product. Trace amounts however may be present.

Design Note

DuPont LF181 is recommended as a general purpose via fill for buried and top vias. DuPont LF181 is silver based and has been designed with the thermal expansion to be compatible with DuPont LF151 and DuPont LF152 dielectrics, so that multilayer circuits can be built free from via cracking. When filling the via, care should be taken to ensure that it is filled level with the dielectric surface. This is best achieved by having the artwork for the via and via-fill of the same dimensions. DuPont LF181 should not be used for connections to Au conductors where the via will see >2 refires. Vias made with DuPont LF181 should be covered with a capture pad formed from the overlaying conductor prior to overprinting with dielectric in order to ensure good dielectric print quality. Encapsulation may be necessary, depending on the required circuit environmental performance. It is the circuit manufacturer responsibility to ensure encapsulation appropriate to the application is used.

Typical Physical Properties

Test	Properties
Viscosity (Pa.s) [Brookfield HBT, UC&SP, 10 rpm, 25°C]	60 – 90
Coverage (cm ² /g)	50
Thinner	4553
Shelf Life (months)	6
Resistivity (mΩ/sq @ 25[mm fired thickness)	5 – 10
Printing: 325 mesh stainless steel screen.	

This table shows anticipated typical physical properties for DuPont LF181 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

1 via fill process: 250-325 mesh stainless steel screen with a 12-16mm emulsion build up. 2 via fill process: 325 mesh stainless steel screen with a 8 - 12 mm emulsion build up.

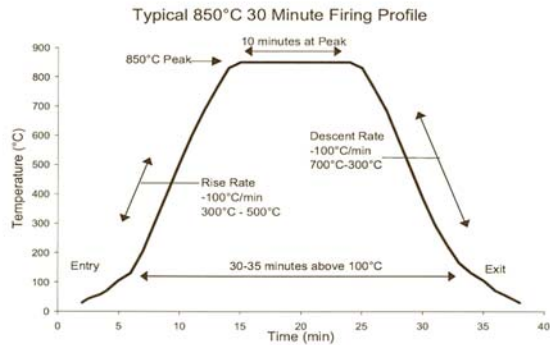
Drying

Allow prints to level for 5-10 minutes at room temperature, and then dry for 10-15 minutes at 150°C.

Firing

850°C peak held for 10 minutes on 30 minutes cycle in an air atmosphere.

Typical 30 minutes fire profile



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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