DuPont LF121

PALLADIUM /SILVER CONDUCTOR

Technical Data Sheet

Product Description

DuPont LF121 palladium/silver conductor composition is intended to be applied to ceramic substrates by screen printing and firing in a conveyor furnace in an air (oxidizing) atmosphere. It has been developed to form interconnecting tracks and pads for component and lead attachment, in hybrid microcircuits and networks.

Product Benefits

- Excellent fine line resolution
- Lead, cadmium, and nickel free*
- Excellent solderability with lead and lead-free solders.
- Excellent green-strength
- Compatible, sequentially or co-fired, with DuPont LF151 dielectric as a crossover

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

Processing Conditions

Printing

200 - 325 mesh stainless steel, 0.3 - 0.5 mil emulsion. Print speeds up to 20 cm/s.

Drying

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

Firing

850ºC peak held for 10 minutes on 30 minutes cycle in air (oxidizing) atmosphere.

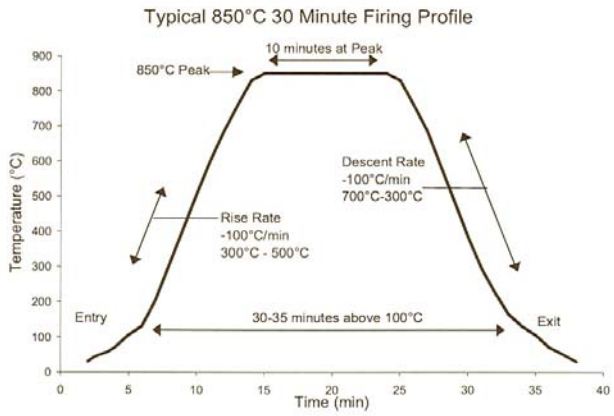
Composition Properties

Test	Properties
Viscosity (Pa.s) [Brookfield HBT, UC&SP @10 rpm, 25°C]	150 - 250
Thinner	DuPont 4553
Retest (months)	6
Typical Composition Properties	
Shrinkage (dried to fired) [%]	22 - 28
Mean fired thickness: (using 200	12 - 16, typical 14
Coverage @ 16µm fired (cm²/g)	67 - 72
Resistivity (mΩ/sq @ 16µm)	≤ 30
Soldered Adhesion[1] Initial (N) Aged (48hrs @ 150ºC)[N]	 ≥ 18 ≥ 18

[1] 90º wire peel test on 2mm x 2mm pad soldered with 95.5Sn/3.8Ag/0.7Cu Solder using mildly activated flux, Alpha 611 on both Alumina.

This table shows anticipated typical physical properties for DuPont LF121 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Figure 1 - 30 Minutes Profile



Processing

Substrates

Substrates of different compositions and from various manufacturers may result in variation in performance properties. DuPont LF121 is recommended for Al_2O_3 substrates only.

Thinner

This composition is optimized for screen printing, thinning is not normally required. 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 behavior of the material and its printing characteristics.

General

Performance will depend to a large degree on care exercised in screen printing. Care should be taken to keep the composition, printing screens and other tools free of metal contamination. Dust, lint and other particulate matter may also contribute to poor yields.

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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