

DuPont 4597R

SOLDERABLE CONDUCTOR

Technical Data Sheet

Product Description

DuPont 4597R is a phthalate and cadmium-free* solderable platinum/palladium/gold conductor for high density single and multilayer hybrids. It has excellent tin/lead solderability and exhibits high leach resistance on both alumina and dielectric.

Product Benefits

When used on alumina or with DuPont multilayer dielectrics, DuPont 4597R offers the following benefits:

- Phthalate and Cadmium free* solderable
- Excellent solder acceptance
- Improved backlight density
- High circuit density
- High reliability

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

Processing

Substrates

Properties are based on test using 96% alumina substrates. Substrates of other compositions and from various manufacturers may result in variations in performance properties.

Screen Printing Equipment

A 200-mesh stainless steel screen with a 12µm (0.5 mil) emulsion thickness is recommended. Printing speeds up to 30 cm/s (12in/s) can be used.

Drying

Allow the wet print to level for 10-15 minutes at room temperature. Dry for 15 minutes at 150°C.

Table 1
Typical Fired Properties

Test	Properties
Line Resolution (lines/spaces) [µm]	150/100
Fired Thickness (µm)	13 - 17
Resistivity (fired thickness) [mΩ/sq @ 10 µm]	30 – 100
Initial Adhesion ¹ (N)	≥ 20
Aged ² Adhesion (N)	≥ 14
Solder Acceptance (%)	≥ 97 on 5704 ≥ 95 on Alumina
Resistance to Solder Leaching ³ on Alumina	≥ 15
Composition Properties	
Viscosity (Pa.s) (Brookfield HBT, SC04 14/6R [UC&SP], 10 RPM, 25°C)	180 - 280
Solids (1050°C) [%]	80.1 – 81.4
Coverage, cm ² /g	60-70
Thinner	DuPont 9180R

This table shows anticipated typical physical properties for DuPont 4597R based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Firing

Dried prints should be fired in a belt furnace. Use a 60-minute cycle with 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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