DuPont 9750R

AG/PT CONDUCTOR

Technical Data Sheet

Product Description

DuPont 9750R Ag/Pt conductor is intended to be applied to ceramic substrates by screen printing and fired in a conveyor furnace in an air (oxidizing) atmosphere. It has been developed to offer very high resistance to solder leaching for applications requiring repeated soldering or severe soldering conditions

Product Benefits

- Exceptionally good resistance to solder leaching
- Good soldering performance
- Optimized for 60 minute 850°C firing profile
- Phthalate, Cadmium, and Nickel Oxide free*

*Phthalate, Cadmium and Nickel Oxide "free" as used herein means that cadmium, phthalate and nickel oxide are not an intentional ingredients in and are not intentionally added to the referenced product. Trace amounts however may be present.

Processing

Substrates

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

Screen Printing Equipment

200-325 mesh stainless steel screen with a 10 µm emulsion build up.

Drying

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

Firing

Dried prints should be fired in a belt furnace. Use a 60-minutes cycle with a peak temperature of 850ºC.

Table 1
Typical Fired Properties

Test	Results
Line Resolution: (lines/spaces)	175/250 µm
Fired Thickness:	14 - 18 µm
Resistivity: (fired thickness)	40 – 50 mΩ/sq @ 20 µm
Initial Adhesion[1] (N) Aged[1] Adhesion (N)	≥ 20 ≥ 20
Solder Acceptance[2] (%)	≥ 90% on Alumina
Resistance to Solder Leaching[2] on Alumina 63Sn/37Pb @250°C 96Sn/4Ag @270°C	35 – 40 cycles 9 – 11 cycles
Ultrasonic Aluminum Wire (25µm) Bonding[3] Initial (N) Aged, 48 hrs, 150°C	0.06 – 0.10 0.04 – 0.09
Silver Migration Resistance(s)[4]	20

[1] 90° wire peel test on 2mmx 2mm pads soldered with 63Sn/37Pb solder at 240°C and using a mildly activated Alpha 611.
[2] Using Alpha 611 flux. Solder coverage measured after a 5s dip in solder. A leaching cycle is represented by a 10s dip in solder and tested on 500µm lines.
[3] Loop strength, K+S Model 494 Ultrasonic Bonder, 25µm aluminum wire (1% Si, 2.1% elongation), titanium carbide tool, 0.32 – 0.34N tool force.
[4] Time to short, distilled water drop with 5VDC across 500µm gap between parallel lines.

Table 2
Composition Properties

Test	Results
Viscosity (Pa.s) (Brookfield HBT, SC04 14/6R [UC&SP], 10 RPM, 25°C)	150 - 250
Solids(750°C) (%)	78.0 – 80.0
Coverage, cm^2/g	50 - 60
Thinner	DuPont 9180R

Table 1 & 2 show anticipated typical physical properties for DuPont 9750R based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

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).

Caution: Do not use in medical applications involving implantation in the human body or contact with internal body fluids or tissue unless the product is provided by DuPont under a formal written contract consistent with the DuPont Policy Regarding Medical Applications of DuPont Materials H-50103-2 ("Medical Applications Policy") and which expressly acknowledges the contemplated use. For additional information, please request a copy of DuPont Medical Caution Statement H-50102-2 and the DuPont Medical Applications Policy.

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