

DuPont 9770R

PLATINUM/SILVER CONDUCTOR COMPOSITIONS

Technical Data Sheet

Product Description

General purpose; low cost. Performance comparable to palladium/silver conductors. Solderable in 62Sn/36Pb/2Ag and 96Sn/4Ag solders; resistant to leaching. High conductivity. Excellent wire bonding.

Product Benefits

- Solderable conductors for microcircuits
- Price/performance combinations optimized for a wide range of applications
- High initial and aged adhesion
- Compatible with resistors

Processing

Printing

Print with 200-325 mesh stainless steel screens to a dried thickness of 30-40µm. Achieving minimum fired thickness as stated is essential to obtaining stated performance characteristics.

Drying

Allow prints to level 5-10 minutes at room temperature. Then dry 10-15 minutes at 150°C.

Firing

Fire with 60-minute cycle to a peak temperature of 850°C for 5-10 minutes. Properties are relatively unaffected by multiple refiring at 850°C and by peak temperature of 850°C-925°C.

Soldering

DuPont 9770R is recommended for use only with 62Sn/36Pb/2Ag solder at 220°-230°C, and 96Sn/4Ag solder at 250°-260°C due to its limited resistance to leaching with other alloys and higher temperatures. In general, 62Sn/26Pb/2Ag solder affords the best resistance to leaching, while 96Sn/4Ag solder affords the highest adhesion after high-temperature storage.

Typical Fired Conductor Properties

Test	Properties
Line/Space Resolution (µm)	175-250
Fired Thickness (µm)	15-20
Resistivity (mΩ/sq)	2-3
Soldering Initial Acceptance ¹ 62Sn/36Pb/2Ag, 220°C 63Sn/37Pb, 240°C 10Sn/90Pb, 325°C 96Sn/4Ag, 260°C	Excellent Excellent Excellent Excellent
Resistance to Leaching ¹ 62Sn/36Pb/2Ag, 230°C 63Sn/37Pb, 250°C 10Sn/90Pb, 330°C 96Sn/4Ag, 270°C	7-9 cycles 2-3 cycles 2-3 cycles 3-4 cycles
Adhesion ² Initial (N) Aged, 48 hrs, 150°C ⁴ (N)	27-36 18-29
Ultrasonic Aluminum Wire (25µm) Bonding ³ Initial (N) Aged, 48 hrs, 150°C	0.04-0.15 0.03-0.07
Silver Migration Resistance (s) ⁴	20

¹ 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.
² 90° wire peel test on 2mm X 2mm pads soldered with 62 Sn / 36 Pb / 2 Ag solder at 220°C and mildly activated flux (Alpha 611, Kester 197)
³ Orthodyne Model 20, double V groove, tool force 350g, 250µm Al wire (99.99%), elongation 10-15%, tensile strength 370-450g.
⁴ Time to short, distilled water drop with 5VDC across 500µm gap between parallel lines.

Composition Properties	
Test	Specification
Viscosity (Pa.s) [Brookfield HBF, Spindle #6, 10 rpm, 25°C]	150-250
Thinner	DuPont 9180R
Coverage (cm ² /g) (Based on 50µm wet film thickness)	50-60
Table 1 & 2 show anticipated typical physical properties for DuPont 9770R 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).



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MCM9770R (1/2015)