

# DuPont QS171

## SILVER/PLATINUM CONDUCTOR

### Technical Data Sheet

#### Product Description

DuPont QS171 silver/platinum conductor is a general purpose microcircuit conductor offering excellent adhesion and fired density and wide processing latitude. It has been designed to be cost-effective in demanding, commercial circuit applications.

#### Product Benefits

- Excellent thermal cycle adhesion and long term aged adhesion
- Broad process latitude
- High conductivity
- Excellent fine line and through-hole printability
- Excellent solderability
- Good wire bondability

#### Processing

##### Printing

DuPont QS171 prints easily using 325 mesh stainless steel screens with a 10 - 15  $\mu\text{m}$  emulsion.

##### Drying

Allow prints to level for 5 - 10 minutes at room temperature followed by drying for 10 - 15 minutes at 150°C in a well-ventilated oven or belt dryer.

##### Firing

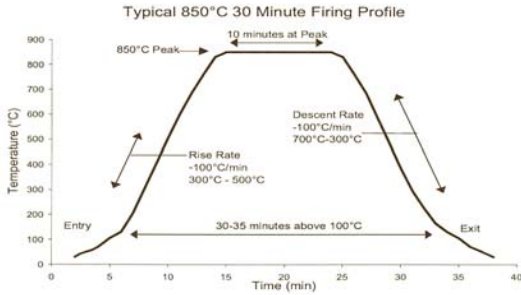
Fire in a well ventilated moving conveyor furnace, in air with either a 30 to 60 minute cycle to a peak temperature of 850°C.

#### Typical Fired Properties

Test	Properties
Fired Thickness ( $\mu\text{m}$ )	10 - 14 (0.4 - 0.6 mil)
Line Resolution <sup>1</sup> ( $\mu\text{m}$ ) [lines/spaces] screen pattern	150 / 100 125/ 125
Resistivity ( $\text{m}\Omega/\text{sq}$ ) At 10 $\mu\text{m}$ fired film thickness	4.5
Solder Acceptance <sup>2</sup> On $\text{Al}_2\text{O}_3$	Excellent
Solder Leach Resistance On $\text{Al}_2\text{O}_3$	4 - 5 cycles
Adhesion Initial (N) After 1000 thermal cycles (N) After 3000 hours at 1000°C (N)	> 25 > 20 > 20
<small><sup>1</sup>Excellent characterized as greater than 95% wetting with smooth solder film after 5- seconds dip in 62Sn/36Pb/2Ag solder at 220°C using mildly activated flux. Equivalent results for 30 or 60 minutes firing profiles. <sup>2</sup>Cycle consist of dip in mildly-activated flux (Alpha 611), 10-second dip in solder (62Sn/36Pb/2Ag solder at 230°C) and washing off flux residue. <sup>3</sup>90° wire peel test on 2mm x 2mm pads soldered with 62Sn/36Pb/2Ag solder at 220°C and mildly activated flux. Average values are stated. Thermal cycle conditions: -40±125°C with 30 minutes at each temperature and approximately 10 minute transition time between temperatures.</small>	
Composition Properties	
Viscosity (Pa.S) Brookfield HBT, UC&S #14, 10 rpm, 25°C	250 - 300
Thinner	DuPont 7502

This table shows anticipated typical physical properties for DuPont QS171 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

## 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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