

# DuPont QM22

## SILVER/PALLADIUM CONDUCTOR

### Technical Data Sheet

#### Product Description

DuPont QM22 is a 3:1 silver/palladium conductor designed to be cofired with the DuPont QM44 dielectric. DuPont QM22 is intended to save processing steps through co-firing. It is not intended to be processed on fired DuPont QM44. DuPont QM22 is recommended as a top conductor for solder attach, and as a resistor termination.

#### Product Benefits

- Cofireable with via fill and dielectric.
- Superior solder aged adhesion performance on both alumina and dielectric.
- Optimized for 30-minute, 850°C firing profile.

#### Processing

##### Substrates

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

##### Printing

Screen-print DuPont QM22 with a 200 - 325-mesh stainless steel screen with a 12µm emulsion thickness.

Note: DuPont QM22 should be printed to >12µm fired thickness for satisfactory adhesion.

##### Drying

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

##### Firing

Cofire the second print of DuPont QM44 dielectric and DuPont QM34 via fill with the DuPont QM22 print. Fire in a well ventilated moving conveyor furnace, in air with a 30-minute cycle with a peak temperature of 850°C.

#### Typical Fired Properties

Test	Properties
Resistivity (mΩ/sq ) (@ 14 µm fired thickness)	15 - 28
Fired thickness (µm)	12 - 16
Line resolution (µm) On QM44 [lines/spaces]	125
Solder Acceptance <sup>2</sup> 62Sn/36Pb/2Ag @ 220°C (%)	≥ 96
Solder Leach Resistance 62Sn/36Pb/2Ag @ 220°C (dips)	8
Adhesion <sup>3</sup> : Initial (N) Aged 1000 hrs @ 150°C (N)	20 - 30 > 18
Composition Properties	
Viscosity (Pa.s) [Brookfield HBT, UC&SP, 10 rpm, 25°C]	150-250
Thinner	DuPont 4553
Coverage(cm <sup>2</sup> /g) (Based on fired thickness of 14 µm)	75 - 85
<sup>2</sup> Percentage of defect free 2 mm x 2 mm squares. Alpha 611 flux. <sup>3</sup> See the DuPont wire peel test procedure	

Table 1 shows anticipated typical physical properties for DuPont QM22 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).

For more information on DuPont QM22 or other DuPont Microcircuit Materials products, please contact your local representative:

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