

DuPont QQ620

ENCAPSULANT COMPOSITION

Technical Data Sheet

Product Description

DuPont QQ620 glass encapsulant composition is intended to form an insulating and protective layer over thick film circuits. It is applied to ceramics substrates by screen printing and fired in an air (oxidizing) atmosphere.

Product Benefits

- Lead and Cadmium free* encapsulant, green color.
- Protection against reactive chemicals.
- Fireable on a low temperature (620°C) profile.

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

Processing

Substrates

Substrates of different compositions and from various manufacturers may result in variations in performance properties.

Thinner

This composition is optimized for screen printing, thinning is not normally required. Use the DuPont recommended thinner for slight adjustment to viscosity or to replace evaporation losses. The use of too much thinner or the use of a non recommended thinner may affect the rheological behaviour of the material and its printing characteristics.

Processing Conditions

Printing

325 mesh stainless steel with 10µm emulsion

Drying

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

Typical Physical Properties

Test	Properties
Fired Thickness (µm)	7 – 10
Composition Properties	
Viscosity (Pa.S) (Brookfield HAT, UC&SP, 10 rpm, 25°C)	90 - 130
Solids (%)	71.8 - 73.8
Coverage (cm ² /g) (at 9µm fired thickness)	165
Shrinkage (%) [Dry to Fired]	~30
Thinner	DuPont 8250

This table shows anticipated typical physical properties for DuPont QQ620 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

620°C plateau for at least 4 minutes, 7-10 minutes above 600°C, and at least 25 min. above 100°C on a 30 min. cycle in an air atmosphere.

Printing

The composition should be thoroughly mixed before use. This is best achieved by slow, gently, hand stirring with a clean burr-free spatula (flexible plastic) for 0.5 - 1 minute. Care must be taken to avoid air entrapment. Printing should be performed in a clean and well ventilated area.

Note: optimum printing characteristics are generally achieved in the room temperature range of 20°C - 23°C. It is therefore important that the material, in its container, is at this temperature prior to commencement of printing. Class 10,000 printing area is recommended of building complex hybrids and multilayer circuits, otherwise severe yield losses could occur.

Drying

Allow prints to level at room temperature, then dry in a well ventilated oven or conveyor dryer.

Firing

Fire in a well ventilated belt, conveyor furnace, or static furnace. Air flow and extraction rates should be optimized to ensure that oxidising conditions exits within the muffle.

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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