

DuPont 5499

POLYMER ENCAPSULANT COMPOSITION

Technical Data Sheet

Product Description

5499 Polymer composition is intended for encapsulation on hybrid circuits, resistor networks and chip components. The polymer is intended to be applied to ceramic substrates by screen printing, then cured at 180°C.

Product Benefits

- Halogen Free*
- Thermoset process (180°C, 20-30 min)
- High adhesion
- Non use of Pb/Cd component as designed
- Black color prior to and after curing
- Co-curing process with edge termination/ encapsulant/markings is possible

*"Halogen Free" as used herein means that the 5499 product is "Halogen Free" as defined in industry standard IEC 61249-2-21.

Processing

Design Note

For optimum smoothness, printing with a double pass squeegee is recommended.

Recommended Processing Procedure

Substrates

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

Processing Conditions

Printing

Cured thickness 30µm, +/-5µm. This is best achieved by using a 200 mesh stainless steel screen with a 20µm emulsion thickness and squeegee of 70 durometer.

Drying

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

Composition Properties

Test	Properties
Viscosity (Pa.s) (Brookfield HBT, #14 spindle&UC, @10rpm, 25°C)	80 - 125
Solids (150°C)(%)	73 - 83
Thinner	J8744
Clean up Solvent	J8744

This table shows anticipated typical physical properties for DuPont 5499 based on specific controlled experiments in our labs and are not intended to represent the product specifications, details of which are available upon request.

Curing

180°C for 20-30 minutes. Fast curing can be achieved with an infrared dryer. Conditions need to be optimized for type of dryer.

Thinner

The composition is optimized for screen printing. Thinner is normally not required. Use the DuPont recommended thinner for slight adjustments 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 behavior of the material and its printing characteristics.

Printing

The composition should be thoroughly mixed before use. This is best achieved by slow, gentle hand stirring with a clean burr-free spatula (flexible plastic) for 1-2 minutes. 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 20-23°C. It is therefore important that the material, in its container, is at this temperature prior to commencement of printing.

Storage and Shelf Life

Containers should be stored, tightly sealed, in a clean, stable environment at temperature 0-5°C. Shelf life of material in unopened containers is three months from date of shipment. Some setting 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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