

Technical Information

5645-SI SEALING GLASS PASTE

The 5645-SI was formulated for sealing lids to silicon substrate. It can also be used as a low temperature cover coat to protect circuitry on silicon wafer. The thermal expansion of 5645-SI is matched to that of silicon. Its key features include:

- Low Temperature Processing.
- Low Organic Content; Clean Burn-out
- Matched CTE to Silicon Wafer.

TYPICAL CHARACTERISTICS⁽¹⁾

Paste Color	Blue
Fired Color	Gray
Firing Temperature	450°C, 30 minutes
Surface Finish	Shinny

(1) Typical properties are based on testing of several batches under various processing conditions. They are not intended as specification limits.

COMPOSITION PROPERTIES

Viscosity: 150 ± 30 Kcps, when measured with Brookfield HBT, Spindle #14, utility cup, 10 RPM, 25°C.

Specific Gravity: 2.40 - 2.80 g/cm³

Recommended Thinner: KOARTAN A-1039

RECOMMENDED PROCESSING PROCEDURE

Printing: Printing with a 200 mesh stainless steel screen using 10-15 micrometer emulsion and 45 degree angle is recommended. Other mesh counts, 60-250, and emulsion thicknesses, 5-25 micrometer, may be used for special applications.

Coverage is approximately 90 cm² per layer, when utilizing a 200 mesh screen and a wet print thickness of about 40 micrometers.

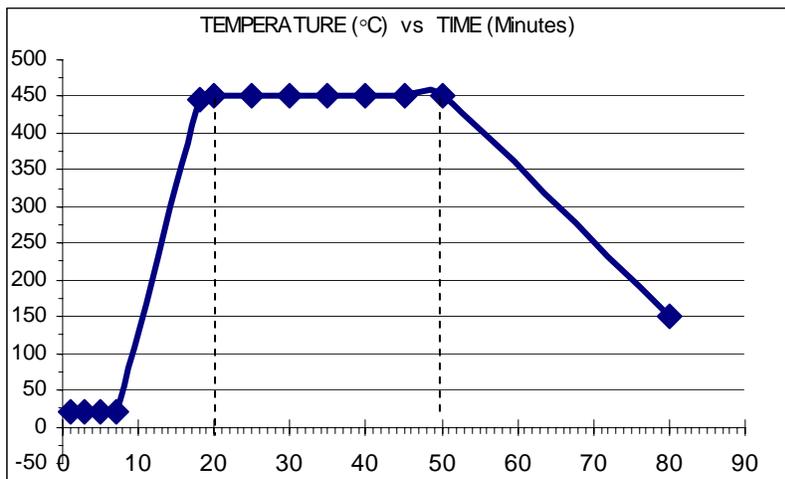
Drying: Wet prints should be allowed to level for 5-10 minutes prior to drying. Dry for 10-15 minutes in a convection oven or belt dryer at 125°C-150°C.

Firing: Firing in air using a belt or box furnace is recommended. Air flow rates must be optimized to ensure that the products of binder burn-off discharge properly and create a fully oxidizing atmosphere in the muffle. A temperature profile as shown the figure below is recommended.

Storage and Shelf Life: Store in tightly capped containers at room temperature. Shelf life is 6 months for unopened jars. Thorough mixing of the paste before each use is recommended. Under ordinary conditions of storage and use the product should not require thinning. However, solvent loss during extended printing runs may be replaced by incorporating up to 0.5% of Koartan A-1039 thinner.

Other System Components:

Cross-Over Dielectric, 850°C	5828-SI
Silver Conductor, 400-500°C	6165-SI
Green Overglaze, 500°C	5650-SI



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