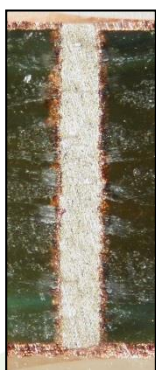
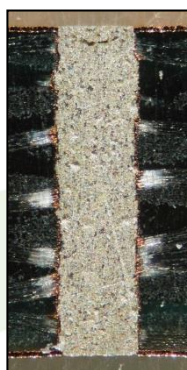


SCHP-7901



Board Thickness = 62mils
Hole Diameter = 8 mils



Board Thickness = 62mils
Hole Diameter = 14 mils

- ③ **Silver Conductive hole fill material**
- ③ **Single-Component this is Thermally Cured**
- ③ **Fills holes easily with no voids**
- ③ **RoHS Compliant**
- ③ **Good Reliability and Compatibility with Copper Plating**
- ③ **Excellent Thermal Conductivity**
- ③ **Halogen-Free**
- ③ **Compatible with Lead-Free Processing**

TECHNICAL DATA SHEET



Conductive Hole Plugging Product

SCHP-7901 is a single-component, thermally cure, silver paste for conductive hole plugging. The high silver content provides good electrical and thermal conductivity. **SCHP-7901** has very good reliability and is compatible with conventional copper plating processes. **SCHP-7901** offers fewer voids, no cracking and has excellent processing characteristics with good printability and is easy to planarize. All Taiyo America products comply with the Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the Restriction of the use of certain Hazardous Substances (RoHS) in electrical and electronic equipment.

Process

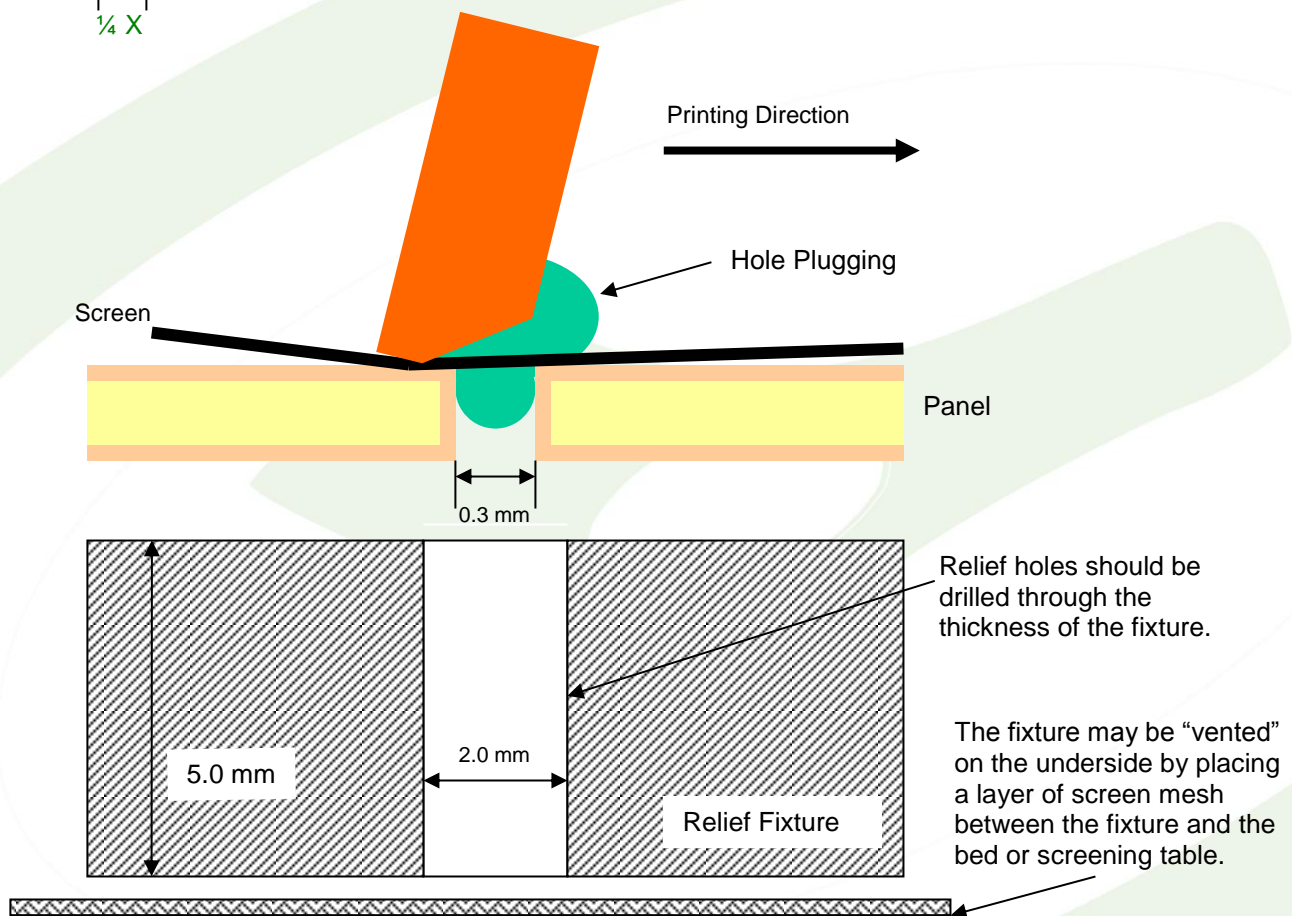
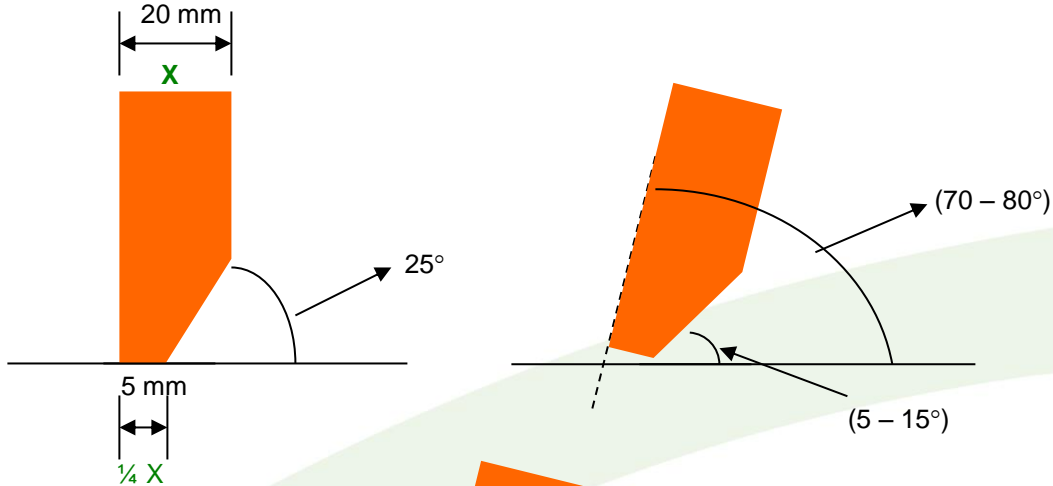
Product Storage	3 months at -10°C 1 week at 5°C 24 hours at 25°C
Panels	Plated Through Holes
Pretreatment	Acid rinse, mechanical scrubbing with rinse and dry
Printing	Standard Stencil Printing Equipment can be used with a hole opening of 0.2 – 0.3 mm larger than the hole size. The recommended squeegee is 70 – 80 durometer hardness.
Preliminary Cure	Hot air convection oven at 120°C, 60 minutes
Planarization	Buff scrubbing with a #220 – #320 grit
Thermal Cure	Hot air convection oven at 150°C, 60 minutes

Final Properties

Test	Results
Color / Filler	Silver / Silver
Silver Content	85.5 – 87.5%
Density	5.1 g/cc
Halogen Content	112 ppm
Pencil Hardness	4H
Solder Heat Resistance (288°C X 10 seconds – 5 times)	Pass
Thermal Conductivity at 25°C	7.43 W/m-K
Thermal Conductivity at 70°C	6.70 W/m-K
Via Hole Resistivity (0.3 mm diameter x 0.8 mm length)	<65mΩ
Via Hole Resistivity (0.5 mm diameter x 0.8 mm length)	<150mΩ
Volume Resistivity	2.0 X10 ⁻⁴ Ω-cm
Through Hole Resistivity (without surface scrubbing)	62 mΩ/hole
Through Hole Resistivity (with surface scrubbing)	65 mΩ/hole
Resistivity Shift after Soldering (260°C for 10 seconds)	7.2%
T(g) – DSC	111°C
T(g) – DMA (Loss Modulus)	114°C
T(g) – TMA (Tensile Method)	112°C
CTE – TMA (α_1/α_2)	45ppm/120ppm

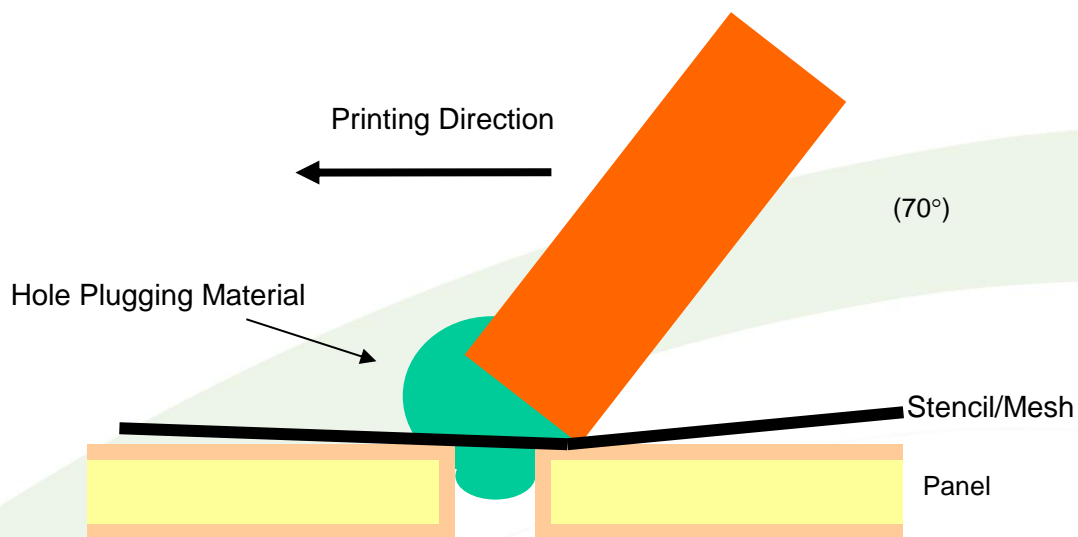
Screen Printing Set Up with Beveled Squeegee

Squeegee Dimensions and Angle

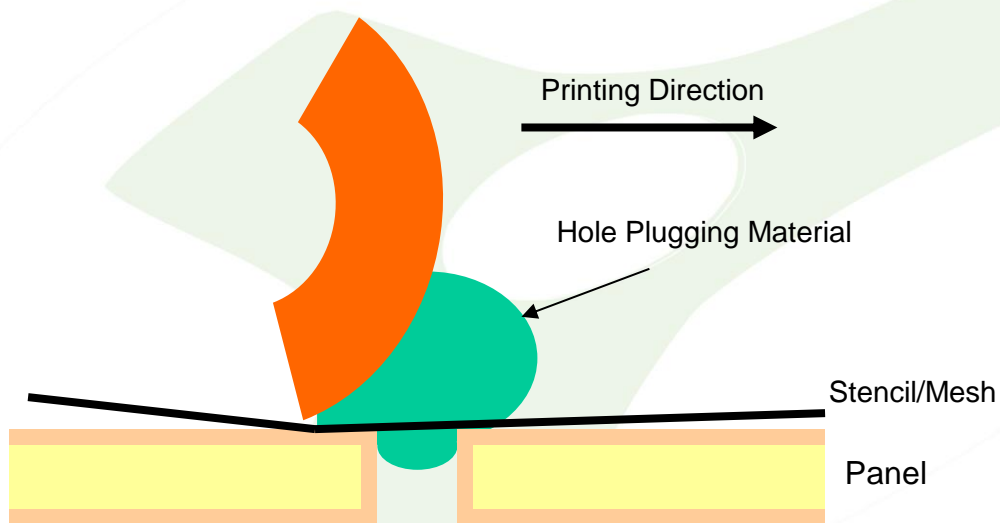


Screen Print Set Up with Straight Squeegee



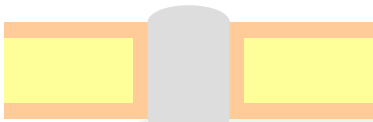

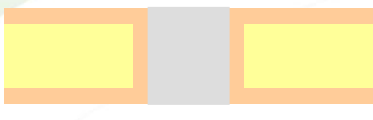

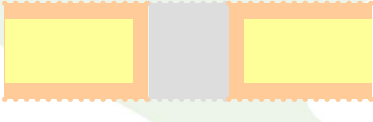
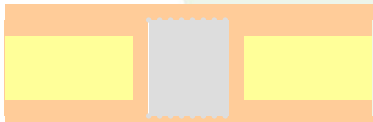

Screen Printing (Pushing Method)



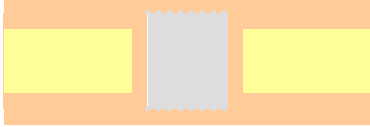
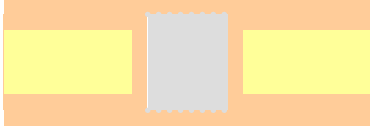
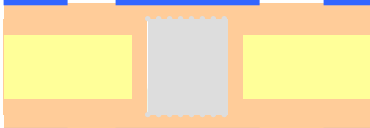
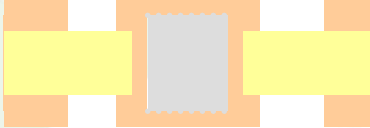
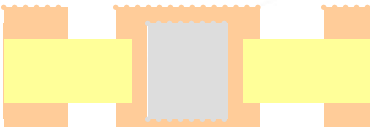

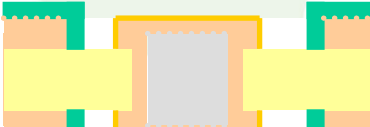
Screen Printing (Plow Method)



Hole Plugging Process for SCHP-7901

Panel Selection		Plated through hole after copper plating
Surface Treatment		Chemical or Mechanical Scrub with water rinse and dry
Screen Printing		Stencil with hole size 0.2 – 0.3 mm larger than the actual hole size, squeegee durometer of 70 – 80.
Pre-Cure		Temperature: 120°C (248°F) Time: 60 minutes
Scrubbing		Buff Scrubbing using #220 - #320 grit
Final Cure		Temperature: 150°C (300°F) Time: 60 minutes
Micro Etching		Prepare surface of copper and silver hole plug material for copper plating
Electroless Copper		Plate copper over hole plug and build up copper thickness
Annealing		Temperature: 100°C (212°F) Time: 30 minutes

Hole Plugging Process for SCHP-7901 (continued)

Electrolytic Copper Plating		Build up copper thickness to desired level
Baking		Temperature: 150°C (300°F) Time: 60 minutes
Etch Resist		Coat surface with etch resist to designs copper pads and traces
Etching/Stripping		Etch copper then strip etch resist
Surface Treatment		Clean surface for solder mask application
Solder Mask		Coat with Solder Mask. See Taiyo for solder mask choices.
Copper Protection		Protect copper with metal plating such as Ni/Au, Ag, and Sn or by HASL or OSP.

Taiyo America, Inc. (TAIYO) warrants its products to be free from defects in materials and workmanship for the specified warranty period (**SCHP-7901 Warranty period is 3 Months**) provided the customer has, at all times, stored the ink at a temperature of -10°C or less. TAIYO accepts no responsibility or liability for damages, whether direct, indirect, or consequential, resulting from failure in the performance of its products. If a TAIYO product is found to be defective in material or workmanship, its liability is limited to the purchase price of the product found to be defective. TAIYO MAKES NO OTHER WARRANTY, EXPRESS OR IMPLIED, AND MAKES NO WARRANTY OF MERCHANTABILITY OR OF FITNESS FOR ANY PARTICULAR PURPOSE. TAIYO'S obligation under this warranty shall not include any transportation charges or costs of installation or any liability for direct, indirect, or consequential damages or delay. If requested by TAIYO, products for which a warranty claim is made are to be returned transportation prepaid to TAIYO'S factory. Any improper use or any alteration of TAIYO'S product by the customer, as in TAIYO'S judgment affects the product materially and adversely, shall void this limited warranty.