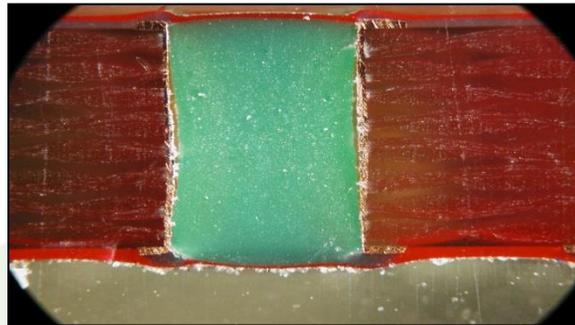


PIHP-200

(UL Name: PIHP-200A / PIHP-200B)



PIHP-200 coated with PSR-4000 BN Red as top coat

- ③ **Photoimagable, 2-component hole fill material**
- ③ **For Plated or non-plated holes**
- ③ **RoHS Compliant**
- ③ **Very Low Shrinkage**
- ③ **Compatible with Solder Mask top coat**
- ③ **Halogen-Free**
- ③ **Compatible with Lead-Free Processing**

TECHNICAL DATA SHEET



Photoimageable Hole Plugging Product

PIHP-200 is a two-component, high solids, liquid photoimageable material designed to plug plated (or non-plated) through holes with minimum shrinkage during processing. **PIHP-200** can be applied using standard screen-printing techniques and is compatible with Taiyo's standard solder mask products. 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

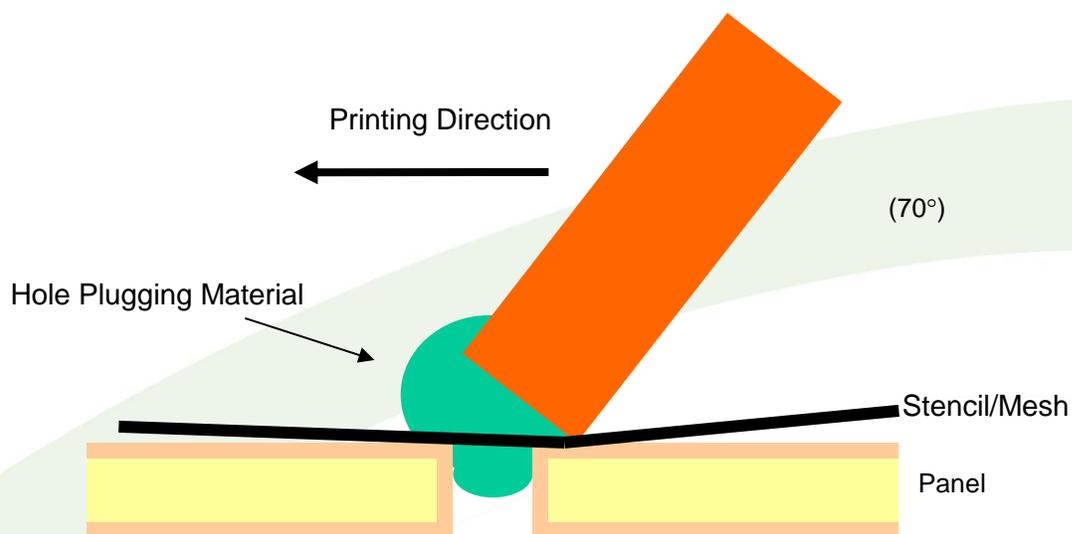
Product Storage	12 month shelf life stored at 68°F (20°C)
Mix Ratio	4 parts Resin to 1 part Hardener (by weight)
Pot life after mixing	3 day after mixing resin with hardener at 68°F (20°C)
Panels	Plated or non-plated panels
Pretreatment	Acid rinse, mechanical scrubbing with rinse and dry
Printing	150 - 250 mesh, polyester screen, 60 – 70 durometer squeegee with slow printing speed.
Preliminary Cure	Hot air convection oven at 80°C, 25 – 35 minutes if using top coat solder mask, 40 – 60 minutes if not using top coat solder mask
Exposure	200 – 400 mJ/cm ² if not using topcoat solder mask.
Developing	1%(wt) sodium or potassium carbonate solution, 90 – 120 seconds at 86°F solution temperature or 60 – 90 seconds at 105°F solution temperature
Thermal Cure	60 minutes at 149°C (300°F) if not using top coat solder mask.

Final Properties

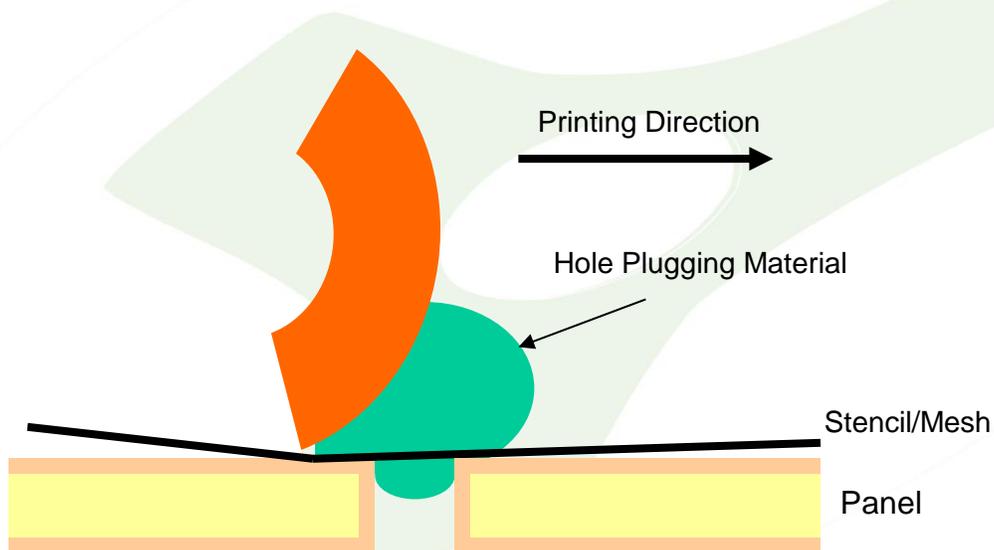
Test		Results
Color		Light Green
Adhesion cross cut		100/100
Pencil Hardness		7H
Halogen Content		481 ppm
Electrochemical Migration (21 Days)		6.60 x 10 ⁷ Ω
Flammability (UL 94V-0)		Pass
Thermal Stress (Solder Float 288°C/10 secs/5 cycles)		Pass
Solder Resistance Rosin Flux, 260°C/20secs/2cycles		Pass
Tg – DSC		100°C
Tg – DMA (Loss Modulus)		100°C
Tg – TMA (Tension Mode)		99°C
CTE – TMA (Tension Mode)	α1 (10-65°C)	59 ppm
	α2 (120-180°C)	160 ppm
Outgassing Test ASTM E-595-90	TML ≤ 1 %	TML-0.72%
A 2 J/cm ² UV Cure was done after thermal cure	CVCM ≤ 0.10%	CVCM-0.03%

Screen Print Set Up for PIHP-200

Screen Printing (Pushing Method)



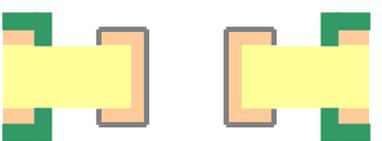
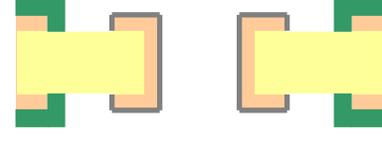
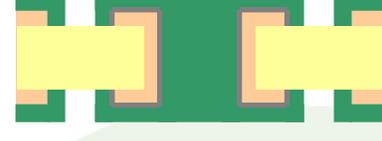
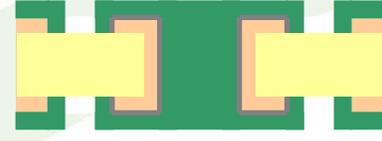
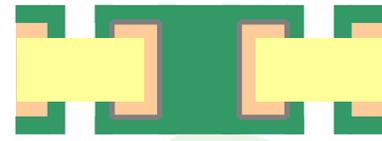
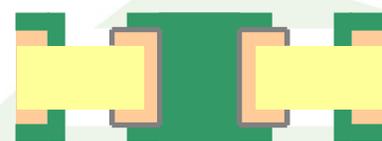
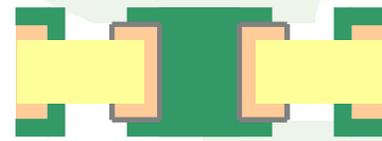
Screen Printing (Plow Method)



Hole Plugging Process for PIHP-200 (Prior to Solder Mask)

Panel Selection		PCB prior to solder mask application
Surface Treatment		Chemical or Mechanical Scrub with water rinse and dry
Screen Printing		Screen using stencil or screen mesh size of 150 – 250.
Pre-Cure		Temperature: 80°C (176°F) Time: 25 – 35 minutes
Exposure		200 – 400 mJ/cm ² or recommended exposure for topcoat solder mask.
Development		Solution: 1% (wt.) Sodium or Potassium Carbonate Temperature: 86 – 105°F (30 – 40°C) Time: 60 – 120 seconds
Final Cure		Temperature: 150°C (300°F) Time: 60 minutes or the recommended final cure of topcoat solder mask.
Surface Treatment		Clean surface for solder mask application
Solder Mask		Coat with Solder Mask. See Taiyo for solder mask choices.

Hole Plugging Process for PIHP-200 (After Solder Mask or Final Metal Finish)

Panel Selection		PCB after solder mask and/or after final metal finish treatment.
Surface Treatment		Chemical Clean with water rinse and dry
Screen Printing		Screen using stencil or screen mesh size of 150 – 250.
Pre-Cure		Temperature: 80°C (176°F) Time: 25 – 35 minutes
Exposure		200 – 400 mJ/cm ² or recommended exposure for topcoat solder mask.
Development		Solution: 1% (wt.) Sodium or Potassium Carbonate Temperature: 86 – 105°F (30 – 40°C) Time: 60 – 120 seconds
Final Cure		Temperature: 150°C (300°F) Time: 60 minutes

Taiyo America, Inc. (TAIYO) warrants its products to be free from defects in materials and workmanship for the specified warranty period (**PIHP-200 Warranty period is 12 Months**) provided the customer has, at all times, stored the ink at a temperature of 68°F 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.