

TAIYO AMERICA, INC.
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CERTIFICATE OF ANALYSIS and CONFORMANCE

This is to certify that the following product has been inspected prior to sale and shipment, and complies with Taiyo America's manufacturing specifications for this product.

PSR-4000 LDI EU


Lot # 9061127

Mfg. Date: 6-11-19
 Warranty Ends: 12-11-19

| <u>PROPERTY</u> | <u>TEST METHOD</u> | <u>MANUFACTURING SPECIFICATION</u> | <u>RESULT</u> |
|------------------------------------|---|--|--|
| VISCOSITY | Toki Sangyo RE100U Viscometer 5 rpms @ 25°C | Before mixing: Report Only After mixing: 180 - 220 ps | 423 ps 186 ps |
| THIXOTROPIC INDEX | Toki Sangyo RE100U Viscometer Viscosity ratio: 5 rpm / 50 rpm | After mixing: Report Only | 1.3 |
| FINENESS OF GRIND | TAI-0-0002 | 5 microns maximum | 5 microns |
| VISUAL EXAMINATION | Microscopic examination: | | |
| | 1. 1-mil drawdown of wet film | No bubbles, pits, voids, particles, color differences. | Passed <input checked="" type="checkbox"/> |
| | 2. Wet film drawdown on grind gauge | No bubbles, pits, voids, particles, color differences. | Passed <input checked="" type="checkbox"/> |
| SCREENABILITY | Visual inspection of screen printed panel | No surface defects, such as bubbles, pinholes, etc. | Passed <input checked="" type="checkbox"/> |
| TACK-DRY | Hot air convection oven 80°C / 30 minutes | Tack-free to the touch | Passed <input checked="" type="checkbox"/> |
| IMAGING | ORC HMW 680GW - 7 kW 150 mJ / cm ² Horizontal Developer - 1% Na ₂ CO ₃ 30°C (86°F) / 60 secs., 28 psi | Stouffer 21 step: 12 - 16 (clear on copper) | 14 |
| RESISTANCE TO SOLDERING (*) | 260°C (500°F) / 30 sec x 1 cycle Rosin-based flux | No discoloration, peeling, or blistering | Passed <input checked="" type="checkbox"/> |
| SOLVENT RESISTANCE (*) | Immersion in PM Acetate 20°C / 30 mins. | No swelling, softening, or blistering | Passed <input checked="" type="checkbox"/> |
| PENCIL HARDNESS (*) | TAI-0-0020 | 6H or greater | 8H |
| ADHESION (*) | TAI-0-0021 | 100/100 on copper | Passed <input checked="" type="checkbox"/> |

(*) - Final cure for these tests was 60 minutes @ 150°C (302°F) in a convection oven

Verified By:

 Q.C. SUPERVISOR 6/13/19
 Name, Title, Date