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.

This product meets all the requirements of IPC-SM-840E Classes H and T and Bellcore (Telecordia) GR-78-CORE and is UL recognized 94V-0 (File #E166421, UL Name: PSR-4000BN).

| PSR-4000BN Black DI | Lot# 9050937 | NG D (6 0 9 1 9 | | |
|--------------------------------|--|--|--------|--|
| 1 SIC-4000DIV Black DI | Lot# [030 13 1 | Mfg. Date: 5-09-19 Warranty Ends: 5-09- | 20 | |
| PROPERTY VISCOSITY | TEST METHOD | MANUFACTURING SPECIFICATION | RES | <u>ULT</u> |
| | Toki Sangyo RE100U Viscometer 5 rpms @ 25°C | After mixing: 175 - 225 ps | 211 | ps |
| THIXOTROPIC INDEX | Toki Sangyo RE100U Viscometer Viscosity ratio: 5 rpm / 50 rpm | After mixing: 1.2 - 1.6 | 1.3 | • |
| FINENESS OF GRIND | TAI-0-0002 | 15 microns maximum | 5 | microns |
| VISUAL EXAMINATION | Microscopic examination: | • | 2.52 | |
| | 1. 1-mil drawdown of wet film | No bubbles, pits, voids, particles, color differences. | Passed | i |
| | 2. Wet film drawdown on grind gauge | No bubbles, pits, voids, particles, color differences. | Passed | l |
| SCREENABILITY | Visual inspection of screen printed panel | No surface defects, such as bubbles, pinholes, etc. | Passed | |
| TACK-DRY | Hot air convection oven 80°C / 30 minutes | Tack-free to the touch | Passed | |
| IMAGING | ORC HMW 680GW - 7 kW 500 mJ / cm ² (under artwork) | Stouffer 21 step: 11 - 15 (clear on copper) | 14 | |
| | Horizontal Developer - 1% Na2CO3 30°C (86°F) / 60 secs., 28 psi | | | ************************************** |
| RESISTANCE TO SOLDERING (*) | 260°C (500°F) / 10 sec x 3 cycles Rosin-based flux | No discoloration, peeling, or blistering | Passed | |
| SOLVENT RESISTANCE (*) | Immersion in PM Acetate 20°C / 30 mins. | No swelling, softening, or blistering | Passed | |
| PENCIL HARDNESS (*) | TAI-0-0020 | 7H or greater | 9 H | |
| ADHESION (*) | TAI-0-0021 | 100/100 on copper | Passed | l j |

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

| Verified B | y: | | | | |
|------------|------|---------|-----|---------|--|
| At. | Q.C. | SUPERVI | SOR | 5/15/19 | |
| Name, | | Title, | I | Date | |