

## NanoSlic® Gold Stencils – Developed and licensed by Florida CirTech

### INTRODUCTION

NanoSlic® Gold is our premium spray on coating applied to our solder paste stencil, which gives previously unseen performance benefits in transfer efficiency. The NanoSlic Gold coating also gives the benefits of improved under-stencil cleaning and a reduction in solder paste bridging.

### ATTRIBUTES

- Significantly reduces the need for underside cleaning and reduces solder bridging
- Superior print definition even at low ARs < 0.60
- Increases transfer efficiency up to 25% depending upon aperture AR.

### APPLICATION

NanoSlic Gold stencils are the most advanced solder paste stencils available today. Advanced chemistry has been developed to impart a highly Hydrophobic and Oleophobic surface to the apertures and contact side of the stencil. This non-stick surface resists solder paste build-up, significantly reducing the frequency of cleaning. The Nano coating bonds to the aperture walls regardless of size or geometry. The NanoSlic Gold coating improves paste release, enabling high yield printing with all area ratios.

Material	Minimum Area Ratio (AR)	
	No Stencil Coating	NanoSlic Gold™
Slic™ Metal (2-5 micron grain size)	0.55	0.45
UltraSlic™ Metal (1-2 micron grain size)	0.50	0.40

\*Lower area ratios can be achieved depending upon the application.

NanoSlic Gold has a robust, abrasion resistant surface that stands up to repeated cleaning. Under normal printing conditions, the coating will provide long lasting benefits. There are no issues with contamination or long term reliability of the printed circuit board. The NanoSlic Gold coating is non-ionic, not conductive, and chemically inert. Please refer to the Testing section for details

### AVAILABILITY

The NanoSlic chemistry is developed and manufactured by Florida CirTech which is licensed to BlueRing Stencils for use in our proprietary application process to create the NanoSlic Gold Coated Stencil.

### TEST RESULTS

Properties	Values
Appearance	Golden yellow
Thickness of coating	2 to 4 microns
Specific Gravity @ 25°C	1.02 g/cm <sup>3</sup>
Static contact angle, water	105 <sup>0</sup>
Static contact angle, n-hexadecane	64 <sup>0</sup>
Abrasion resistance, ASTM D2486, Isopropyl Alcohol	>2000 cycles
Abrasion resistance, ASTM D2486, IPA Based Flux	>2000 cycles
Pencil hardness	> 9H
Resistivity	> 10x10 <sup>12</sup> ohm-M
Ionic residues (ROSE)	0 µg of NaCl / liter
Ionic species on board (as received)	None detected
Ionic species on board (after reflow)	None detected
ECHA, REACH, RoHS, RoHS 2	Compliant

### CLEANER COMPATABILITY

NanoSlic Gold is very chemically resistant. It will not be affected by the large majority of commercial stencil cleaners. We have tested the cleaners below and found them to be compatible with the NanoSlic Gold coating.

KYZEN: Aquanox A8820, Aquanox A8830, Aquanox A8831, Cybersolv C3400, Cybersolv C8622, Cybersolv C8882, KYZEN E5611, KYZEN L5314

Petroform: Axarel 2200, Bioact SC-10, Bioact SC-22, Hydrex A-Plus, Hydrex SP-50

Simple Green: Stencil Cleaner

Smart Sonic: 440-R SMT Detergent

Zestron: Vigon SC200, Vigon SC202, Vigon SC210, Vigon UC160, SD100, SD301, SW.

The following cleaners are not recommended for use with NanoSlic: Zestron Atron SP200, KYZEN E5615