

## TECHNICAL BULLETIN

### Electroless Nickel Immersion Gold Process Parameters

PROCESS BATH	BATH MAKEUP	ANALYSES	FREQUENCY	RANGES	REPLACEMENT
<b>PC300 Cleaner</b>	3% vol PC300 10% vol sulfuric acid	Sulfuric acid titration Addition of PC300	1x / week	8 - 10% sulfuric acid	Every 4 months Or > 15 ft <sup>2</sup> of copper / gal
<b>Micro etch: CirEtch 130</b>	10% vol Cir130M 10% vol sulfuric acid 10% vol Cir130A	Etch depth Sulfuric acid titration Cir130A titration Copper sulfate titration	2x / week	40 – 80 microinches 8 – 10% sulfuric acid 8 – 10% Cir130A	> 280 g/L of copper sulfate pentahydrate
<b>Pre-dip, sulfuric acid</b>	5% vol sulfuric acid	Sulfuric acid titration Copper by AAS	1x / week	4 – 5% sulfuric acid	Every month Or > 150 ppm Cu
<b>CT300 Catalyst</b>	5% vol sulfuric acid 4% vol CT300	Sulfuric acid titration Palladium by AAS Copper by AAS	2x / week	4 – 5% sulfuric acid 25 – 35 ppm Pd	Every 6 months Or > 300 ppm Cu Or after 5 MTOs
<b>Post-dip, sulfuric acid</b>	2% vol sulfuric acid	Sulfuric acid titration Copper by AAS	1x / week	1 – 2% sulfuric acid	Every month Or > 100 ppm Cu
<b>EN300 Electroless Nickel</b>	20% vol EN300MU 5% vol EN300R1 pH to 4.9 use ammonia or sulfuric acid	Nickel titration Reducer titration pH	2x / day	5.6 – 6.4 g/L Ni 27 – 33 g/L Reducer	After 4.5 MTOs Or > 150 g/L sodium orthophosphite
<b>IG300 Immersion Gold</b>	20% vol IG300 0.10 oz/gal potassium gold cyanide pH to 4.9 – 5.1 use KOH or citric acid	Gold by AAS IG300 titration Nickel by AAS Copper by AAS	Daily	0.03 – 0.10 oz/gal Au metal	> 800 ppm Ni Or > 6 ppm Cu