

Process flow chart

Responsible person	Process flow	Table and record used
Electroless Gold Section	<pre> graph TD A[Material loading] --> B[Exchange] B --> C[Degrease] C --> D[Hot water clean] D --> E[Water clean] E --> F[Water cleaning] F --> G[Micro etch] G --> H[Water cleaning] H --> I[Water cleaning] I --> J[Acid cleaning] J --> K[Pure water cleaning] K --> L[Pre-immersion] L --> M[Activation] M --> N[Post immersion] N --> O[Empty tank] O --> P[Pure water cleaning] P --> Q[Electroless Nickel] Q --> R[Pure water cleaning] R --> S[Electroless gold] S --> T[Recycling] T --> U[Pure water cleaning] U --> V[Hot pure water cleaning] V --> W[Unloading] Q --> X[Pure water cleaning] X --> Y[Host pure water clean & degrease] Y --> S style Q fill:none,stroke:none style X fill:none,stroke:none style Y fill:none,stroke:none style W fill:none,stroke:none </pre>	Checklist First grade maintenance table 8-1 First article inspection table for electroless gold. 8-2 PH test table for electroless gold line and Ni, Au chemical tank. 8-3 Chemical tank change record for electroless gold line. 8-4 Water cleaning tank change record for electroless gold line.

6-3 Operation conditions

Name	Chemical solution name	Concentration range	Temperature	Analysis frequency	Frequency of tank change
Acid cleaning tank	H ₂ SO ₄	-	40 (35-45)	Daily	14 days
Micro etch tank	SPS	-	28 (25-40)	Daily	Cu > 12 g/L
	H ₂ SO ₄	-			
	Cu content	-			
Acid cleaning tank	H ₂ SO ₄	-	RT	Daily	2 days
Pre-immersion tank	H ₂ SO ₄	-	RT	Daily	3 days
Activated tank	Pd	-	23 (20-27)	Each shift	Cu > 100 ppm or one month
	H ₂ SO ₄	-			
Post Immersion Tank	H ₂ SO ₄	-	RT	Daily	2 days
Electroless Nickel Tank	Ni	-	83 (80-90)	Each shift	6MTO or Anti-precipitation current > 0.8Amp
	NaH ₂ PO ₂	-		Daily	
	pH	-		Each shift	
	NaH ₂ PO ₃	-		Daily	
Immersion Gold Tank	Au	-	86 (80-90)	Each shift	8MTO or Ni > 800ppm or Cu > 5ppm
	Cu content	-		Daily	
	Ni content	-		Daily	
	PH	-		Each shift	
Inspect on gold and nickel thickness	First Article Inspection can be performed in different frequencies, for example: each lot, each shift, each new material number; inspection in the production is about very two hours.			Take two boards, each side has five points and the total is 20 points, then use X-RAY to measure gold and nickel thickness.	