Future Coat Technology

BETA PLUS

1. Characteristic

(1).Advanced process and material are transferred from the foreign country Transferred Materials and processes possess excellent carrying and brightness capacities, and have the outstanding low-zone leveling ability.

(2). Wide range of working temperature: good effect is achieved between 20-40 C .

(3). Brightening agent has the abilities of strong stability, easy operation and low consumtion.

2. Electroplating technology:

Composition	Range	standard
Copper sulfate CuSO45H	160-220	200
Sulphuric Acid H2SO4 (g/L)	40-90	60
Chloride Ion CL- (mg/L)	40-100	60
Beta plus Mu	4-6	5
Beta plus A	0.4-0.6	0.5
Beta plus B	0.3-0.5	0.4
Temperature (°C)	20-40	28
Anode Current Density (A/dm²)	1-6	
Cathode Current Density (A/dm²)	1.5-8	
Mixing	Air agitation	
Voltage (V)	3-9	

3. Plating solution process:

(1). Fill in 2/3 DI water into the preparation channel. (Please note: Prior to this step

The water must be checked for the presence of chloride ion .

(2). Add in the Copper Sulfate, required in the start quantity, and stir quantity, and Stir them to be dissolved.

(3). Add in the wanted Analytic Reagent Sulphuric Acid.

(4). Add in Activated Carbon (5g/L) and stir for 4 hours, and then perform filteration after static precipitatin.

(5). Add in Chloride Ion and additive, required in the start quantity, after 8hours electrolysis

(6). Start production stage after trial plating is normal.

4. Method to solve beta plus problems:

problem	cause	Solution
Burn easily for plating layer	1.copper content is too low	1. analyze it and increase content
	2.current density is too high	2.raise the channel temperature
	3. channel solution temperature is too low	3. raise the channel temperature
	4.Chloride ion content is too low	4. analyze it and Chloride ion
poor dispersibility of plating layer	1.current is too low 2.sulphuric acid content is low 3.chloride ion content is high 4.channel temperature is high 5.beta plus B is too much, but beta plus A is too little	1.adjust current 2.analyze it and add sulphuric acid 3.lower the content of chloride ion 4.reduce the temperature of channel 5.add beta plus A properly

Good plating layer, but there are pinholes and pockmarks	**1.organic impurity is too much** **2.too little beta plus Bor too little Mu** **3.filltration is not enough**	**1.treat it by hydrogen peroxide, activated carbon** **2.add them properly** **3.reduce filter pore size**
Branching treelike shape or stripe on the plating layer	**Too much beta plus B or too little beta plus B** **2. Chloride ion is not enough.**	**1. Add beta plus B to adjust it, or add a little hydrogen peroxide.** **2.increase chloride ion**
Poor brightness	**1.imbalance in the proportion of brightening agent** **2.organic impurity is too much** **3.channel temperature is high** **4. anodic area is not big enough** **5.current is too low**	**1.brightening agent proportion** **2.treat it by hydrogen peroxide, Activate carbon** **3. Lower temperature.** **4.increase anodic area** **5.raise current appropriately**
Bad Levelling of plating layer	**1.copper sulfate content is low** **2.too little beta plus A** **3.too little beta plus Mu** **4.chloride ion content is low**	**1.anlyze it and add copper sulfate** **2.increse beta plus A** **3.add beta plus Mu** **4.analyze it and add chloride ion**
Not bright on the plating layer and fog	**1.chloride ion content is too high** **2.critically insufficient beta plus Mu** **3.too much beta plus Mu**	**1.analyze it and treat it** **2.add it appropriately** **3.treat** **It by hydrogen peroxide, activated carbon**

5. The adding method of additive

Beta Plus Mu starter: Used for the start or channel change, to support beta plus A, beta plus B, to make the strong

Leveling and brightness plating layer, and remove pinholes.

Beta plus A leveling agent: Used to make low-zone to get the good leveling and gloss effect, and improve

The whole leveling effect.

Beta plus B bright agent: Used to prevent high-zone from burned, and make plating layer brighter, so as to gain the strong leveling and excellent brightness effect.

6. Consumption: calculated per kiloampre .hour

Beta Plus : 50-70 m1/kiloampre .hour

Beta plus B :50-70 m1/kiloampere .hour

Beta plus Mu Approximately 5%A+B gross consumption. it is generally unnecessary to add it in the daily production. Every time increase 1 kg copper sulfate, and then add in 15-20 ml