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ZN-638

Brightener for Potassium Chloride Zinc Plating

Plating Process

TECHNICAL DATA

ZN-638

ZN-638 brightener for potassium chloride plating of zinc

- It is our new generation potassium salt zinc plating brightener, its performance is same to similar products overseas.
- There are two agents, brightener and MU. It is white-bright and fast-gloring.
- Excellent at anti-Ferrous impurity, for both barrel and rack operations
- Subtle layer, good luster, easily to yellowish-passivation, blue and white passivation, white-passivation.
- Stable solution, less consumption, wide temp-range, high cloud point, suitable to produce at high temp

1. TECHNICAL FORMULA

Formula and Operation Condition	Rack plating	Barrel plating
KCl	180~220g/L	200~240g/L
$ZnCl_2$	60~70g/L	40~55g/L
H_3BO_3	30~35g/L	30~35g/L
ZN-638A Brightener	0.3~1ml/L	0.2-1 ml/L
ZN-638B MU	15-25ml/L	15-25 ml/L
PH	4.5~5.5	5.0~6.0

DK	0.5~5A/dm^2	0.2~3A/dm^2
SK：SA	1：1.5~2	1：1.5~2
Anode	0#zinc plate	0#zinc plate

2. Bath Preparation

1) Add water at the 2/3 amount of bath volume, then add above amount of KCl and $ZnCl_2$ and stir.
2) Dissolve H_3BO_3 with 80℃ hot water and add slowly into the bath, then add 1-2g/L zinc powder. Stir 20-30 minutes.
3) Filter into the bath after solution becomes clarified. Add water according to calculated volume.
4) Dissolve above calculated Zn-638 additive by one time of volume water and add into the bath. Stir uniform, and then start to do trial plating.

3. Bath Management

1) ZN—638A brightener consumption is 100--150ml/KAh，ZN—638B MU consumption is 80~100ml/KAh。
2) When adding brightener, mix brightener and MU at the ratio of 1-2 to 1 volume uniform, dissolve with water at 1 or 2 times, and then add into the bath. Add less but more times.
3) If the previous solution is KCl zinc plating, do not need any special treatment, add Zn-638 directly.
4) When adjust and reduce PH value, dilute HCl at 5-10 times water and then use.
5) Guarantee bath solution stable when producing, dissolve raw material out of the bath before replenishing.

4. Trouble-shooting

Phenomenon	Cause	Action
Turbid solution, more consumption brightener	1. Too much Fe impurity 2. Too much solid 3. pH value too high or too low 4. Temp too high 5. KCl assay too high 6. Pretreatment not good	1. Add WZn acid zinc plating impurities remover or treat 2. Filter 3. Adjust to normal range 4. Reduce temp 5. Adjust to normal range 6. Strengthen pre-treatment
Not good covering power	1. Not sufficient brightener 2. Low KCl assay, High $ZnCl_2$	1. Replenish brightener appropriately

	assay 3. Too low or too high pH value 4. Too high temp 5. Too low current density	2. Analysis and adjust 3. Adjust to normal range 4. Reduce temp to normal range 5. Raise current density
Scorch easily, barrel Mark, less brightness	1. Too high Fe impurity 2. Too high current 3. Too high or too low pH value 4. Less H_3BO_3	1. Add WZn acid zinc plating impurities remover 2. Reduce current density 3. Adjust to normal range 4. Add proper H_3BO_3
Not good plating in low current region after replenish KCl, ZnCl2	1. Drag into Fe impurity 2. Drag into Cu and Pb impurity 3. Not sufficient brightener	1. Electrolyte with low current or add WZn impurities remover 2. Electrolyte with low current or treat by zinc powder 3. Replenish proper brightener
Not bright, foggy layer	1. Not sufficient brightener 2. Too much organic impurities 3. Too much metal impurities	1. Replenish appropriately 2. Big treatment 3. Big treatment or add WZn impurities remover
Blistered, Peeled, Blackened layer	1. Not good pre-treatment 2. Add too much or too less brightener or MU.	1. Do pre-treatment well 2. Absorb with activated charcoal and adjust

Declaration: All about these product suggestions are based on our trust test and data, for reference only.