



Future Coat Technology

FCT Non Cyanide Alkaline Zinc

FCT Non cyanide Alkaline Zinc is a technology of alkaline cyanide free zinc plating for rack plating and barrel plating, which will produce the bright plating effect with the even thickness.

Chromium passivation process can be implemented for all plating to obtain the blue, rainbow, green and black surfaces, without any chelating agent and complexing agent in this process.

1 Features/Advantages:

- Easy for use
The special starting additives are not required
The first process can be handled directly with
The stable quality for products
- Beautiful color of blue passivation coating
it is applicable for multiply
Production lines.
- Plating with low stress and good ductility
without pinholes and points
From the poor binding
- Plating with the high corrosion resistance
achieve many standards for
Corrosion resistance.
- Even coverage and distribution
product efficiency enhancement

2 Necessary materials:

FCT NCZ A

It is used for starting and supplementing

FCT NCZ B

it is used accelerant of brightener for
Starting and supplementing

FCT NCZ C

it is the brightness additive in low current
Densities to eliminate the effect of
Inorganic impurities, for the starting and
Supplementing

FCT NCZ Conditioner

it is the water conditioner without
Chelating agent to dispose agent to
dispose the hard water.

2 Equipment:

All the equipment for the working solution of cyaniding zinc plating is applicable
For the process

Bath: PVC lined tank or stainless steel tank with other approved materials (which
Is used to prevent the irregular current)

Heater: steel, titanium, or PTFE. Closure valve and power failure protection with
Low liquid level are required on the header

Cooler: If necessary, steel, titanium or Teflon tube circulatory cooling system can
Adopted plating rack and barrel roll: plastic coating rack and PP barrel

Mixture: Barrel roll, cathode rod or filtering solution (at least 1-2 times circulation
For one hour)

Filtering: if necessary, the continuous filtering should be done, and 10 μ filter Module should be used. The filter module should be put outside of zinc dissolving Tank (at least 1-2 times circulation for one hour). Filter paper is not allowed to be Used

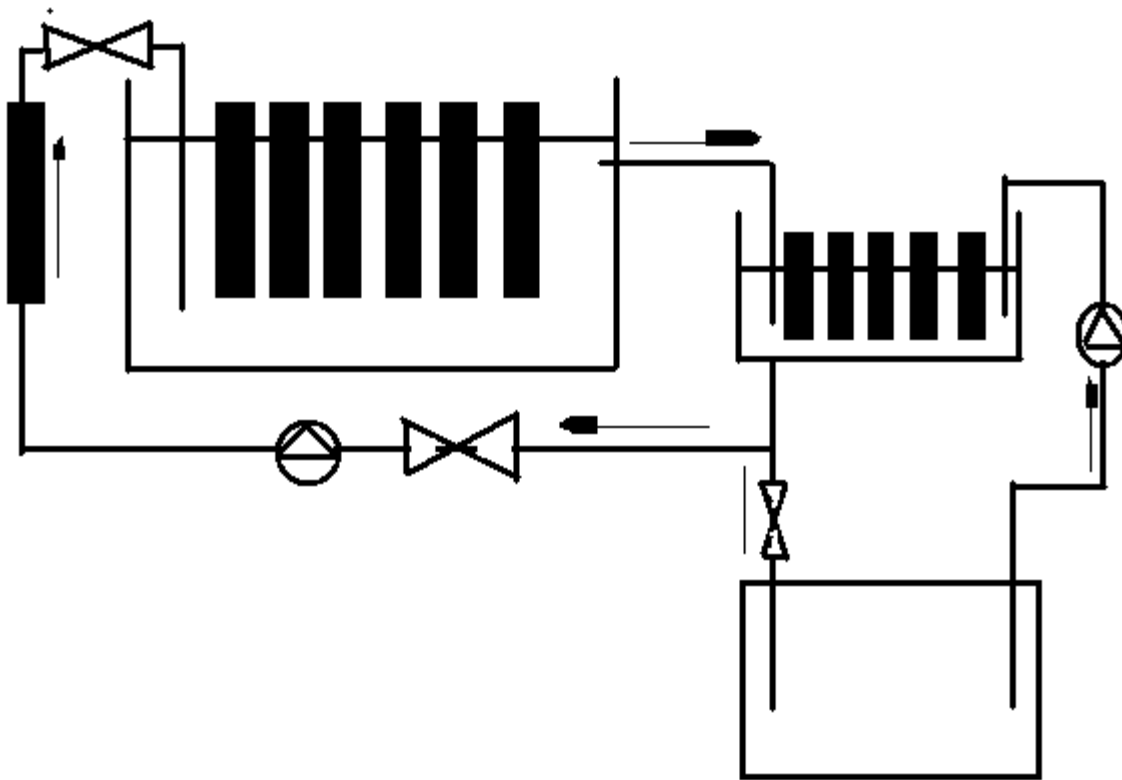
Ventilation: it is required

Automatic chemical feeding device: it is required, in particular, for FCT NCZ A and B

Anode: medium carbon steel. Zinc is added after dissolved in another bath

Zinc dissolving bath: high purity (99.99%) zinc granule or zinc block are selected to

Put in the steel basket. The volume of dissolving bath is equal To 10% operation solution volume. The following figure is a typical Diagram for the locations of working bath. Generally the required zinc dissolving bath is 100kg/100Ah. If the zinc dissolving quantity is low, the contact surface area between steel and zinc should be Increased.



Note: Chinese character in the above figure translated into English as follows:

: Zinc feeding system

Filtering

plating

Galvanized steel anode

Zinc dissolving bath

Storage tank

4: Operative conditions:

Rack plating:

		optimum	Range
Zn	g/L	14	8~16
ZaOH	g/L	150	110~175
FCT NCZ A	m1/L	15	12~20
FCT NCZ B	m1/L	0.5	0.25~3
FCT NCZ C	m1/L	2	1~3
FCT NCZ CONDITIONER	m1/L	15	10~20
	Note: The minimum proportion between ZaOH and Zn is 10:1		
Temperature	°C	28	20~45
Ratio between Anode and cathode		2: 1	
Current density	A/dm	2.5	20~5

Remark: this process should be operated within the range of current densities.

Barrel plating:

		Optimum	Range
Zn	g/L	18	14~20
NaOH	g/L	150	120~175
FCT NCZ A	M1/L	10	8~15
FCT NCZ B	M1/L	0.25	0.2~2
FCT NCZ C	M1/L	2	1~3
FCT NCZ CONDITIONER	M1/L	12	10~20
	Note: The minimum proportion between ZaOH and Zn is 10:1		
Temperature	°C	28	20~45
Ratio between Anode and cathode		2: 1	
Current density	A/dm ²	2:5	20~5

Remark: this process should be operated within the range of current densities.

5. Steps of starting:

1. Clean the bath and fill 2/3 water in it;
2. Feed the NaOH with the required quantity and dissolve it carefully;
3. Put the steel anode basket containing the zinc granule with high purity (99.99%) into the bath.

Note: the hydrogen gas may be produced during the process of zinc dissolving, and therefore the ventilation equipment should be used to prevent the gathering of hydrogen gas.

4. When the zinc concentration has achieved 14g/L calculated by the final volume, the anode basket should be taken out;
5. Fill water, and keep the residual volume of additives, and then even mixture, cooling, and sampling analysis.
6. The concentration of zinc is 13-15g/L, and then concentration of NaOH is 140-160g/L. if above concentrations are wrong, they should be adjusted before the additive is fed;
7. Feed FCT NCZ CONDITIONER with the required quantity and completely dissolved;
8. Feed FCT NCZ A with the required quantity and mixture;
9. Feed FCT NCZ B with the required quantity and mixture;
10. Feed FCT NCZ C with the required quantity and mixture;
11. Start the filtering system, and heating or cooling to be required temperature.

Remark: it is necessary that the solution should be handled through electrolysis before the electroplating.

We can provide the zincate solution with the required purity to substitute the zinc anode
Dissolving in the NaOH.

6. Operation:

1. Preprocessing:

The oil removal performance of alkaline cyanide free zinc plating solution is relatively weak; Therefore, the requirement of its preprocessing is the similar with acid chloride zinc plating solution or bright nickel plating solution.

The oil removal and pickling solution should be analyzed frequently, to maintain its optimum concentration and best temperature.

Before the zinc plating processing, work pieces should be disposed in the bath with 15-30 g/L NaOH, 10-20mL/L FCT NCZ CONDITONER, and pneumatic blending system, so as

To remove acid membrane and adjust the metal surface to prevent the dissolved iron to be brought into the solution. These two materials are blended to be completely dissolved

2. Supplementing:

NaOH FCT NCZ A, B, A and FCT NCZ C should be

regularly feeded into the operative solution of FCT NCZ Meanwhile, the quantities to feed A, B, and c should be determined as the ampere-hour and hull cell and experiments results, with the feeding quantity per 1000 Ah as follows:

a). Rack plating: 100 - 150 ml

Barrel plating: 50-150ml

b). Rack plating: 40-80ml

Barrel plating: 50-80ml

c). RACK PLATING: 50ml

Barrel plating: 100-300ml

Special statement

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