

TECHNICAL DATA SHEET

ZINKOL CYANIDE FREE ALKALINE ZINC

Zinkol 200 is a new generation advanced cyanide free alkaline zinc process which produces lustrous zinc deposit over wide current density range. It has very high cathode efficiency.

SALIENT FEATURES:

- Cyanide free high efficiency alkaline zinc process.
- Suitable for rack and barrel operations.
- Perfect receptivity of conversion coating.
- Excellent low current density coverage.
- Excellent metal distribution.

MAKE UP:

	Optimum	Range
Zinkol Zinc Salt	110 gm/l	100-125 gm/l
Zinkol 200 A	12 ml/l	10-15 ml/l
Zinkol 200 B	1.5 ml/l	1-3 ml/l
Zinkol 200 C	3 ml/l	2-4 ml/l
Zinkol 200 P	1 ml/l	0.5-1.5 ml/l

1. Fill the tank with 1/3rd full with water.
2. Slowly with stirring add required amount of Zinkol Zinc Salt. As the reaction is highly exothermic, it is recommended that the Zinkol Zinc Salt added in small quantity with continuous stirring.
3. After the dissolution make up the operating level with water and allow the solution to cool at room temperature.
4. Filter the solution and electrolyse the bath for 5-8 hours.
5. Add the calculated amount of Zinkol 200 A, Zinkol 200 B and Zinkol 200 C.
6. The bath is ready for use.

BATH PARAMETERS :

	Range	Optimum
Zinc Metal	8-15 gm/l	10 gm/l
Caustic Soda	100-150 gm/l	120 gm/l
Voltage (Rack)	3-6 volts	5 volts
(Barrel)	10-12 volts	11 volts
Loading	0.4-0.7 amp/l	0.5 amp/l
Temperature	20-40°C	30°C

CYCLE:

- Soak cleaning
- Water rinse
- Pickling (Hcl 50%)
- Water rinse
- Electro cleaning.
- Water rinse
- Sulphuric Acid (10% V) dip.
- Water rinse
- Neutralize dip(Caustic soda 20 gm/ l)
- Zinkol 200 Alkaline Zinc plating
- Water rinse
- Water rinse
- Nitric acid dip (1% volume)
- Water rinse
- Passivate
- Water rinse
- Water rinse
- Drying

CONSUMPTION OF ADDITIVES:

The recommended maintenance of Zinkol 200 A, Zinkol 200 B and Zinkol 200 C are best determined by Hull cell analysis and visual observation of the work.

Zinkol 200 A is main carrier brightener.

Zinkol 200 B is a booster which along with Zinkol 200 A gives brightness in low current density areas.

Zinkol 200 C is a purifier which eliminates dark spots on plated surface due to impurities.

The approximate recommended additions are :

Zinkol 200 A 150-250 ml/1000 amps.

Zinkol 200 B 75-150 ml/1000 amps.

Zinkol 200 C 50-100 ml/1000 amps.

CONTROL:

Analyze and maintain zinc metal from zinc anodes (99.99%) and caustic soda by on the basis of analysis.

In case of high Zinc content, MS coated with Nickel can partially replace zinc anode.

In case of low zinc metal zinc anodes can be left in the bath during idling period.

The concentration of sodium hydroxide is very essential and is to be maintained within recommended range for better throwing power.

Sodium hydroxide content in the bath can be replenished by dissolving sodium hydroxide separately in water and adding the same after cooling.

ZINC METAL:

Reagents:

0.1M EDTA buffer solution (100g/l NaOH and 240 ml/l 98% acetic acid in demineralised water), indicator xylenolorange-tetra sodium salt, Mixture of 1% in KNO₃.

Process :

Pipette 5 ml into a 250 ml Erlenmeyer flask, add about 100 ml Demineralised water, 20 ml buffer solution and a spatula tip of indicator. Titrate with 0.1M EDTA from red to yellow.

Calculation:

consumption in ml x 1.3078 =g/l Zinc

SODIUM HYDROXIDE:**Reagents :**

1N sulphuric acid, indicator :0.1 % solution of tropaelin O

Process :

Pipette 5 ml into a 250 ml Erlenmeyer flask, add 100 ml demineralised water, 5 drops of indicator and titrate with 1N sulphuric acid from orange Brown to yellow.

Calculation :

Consumption in ml x 8.0 = g/l NaOH

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