

THE TECHNICAL DATA SHEET

ZINPO EB-24:

Zinc Phosphate for immersion Process

Properties:

- Suitable for steel and zinc substrate.
- Uniform deposition of zinc-phosphate layer.
- Excellent Corrosion Protection
- Excellent adhesion properties for subsequent coatings such as rubber Coating, paints and adhesive.
- Produces final spherical crystal structure.
- Long service life.

Process Flow:

- Degreasing Bath
- Water Rinse²
- HCL Dip (percentage subjected to rust)
- Water Rinse²
- Activator Dip
- Phosphate Bath
- Water Rinse²
- Air Dry

Degreasing Bath Make-up Method:

- Firstly, clean bath thoroughly, and then add Ro/tap water 2/3rd.
- Heat water 60-70°C.
- Add degreasing salt (EB-1001) 80-100 gram per liter after mixing well in separate tank /bath.
- Level solution till highlighted tank volume mark.

Phosphate Bath Make-up Method:

- Firstly, clean bath thoroughly, and add Ro/tap water 2/3rd & heat water 60-70°C (optimum 70°C).
- Add Zinpo-24 50-60 gm/liter with continuous stirring.
- Add 2-3 gram per liter Booster-Acc with thoroughly mixing.
- Level solution till highlighted volume mark.
- Dip parts after pretreatment for 10-20 minutes.
- Rinse thoroughly and leave for air dry.

Total Acid (TA) Analysis Method:

The total acid value is meant to indicate the total amount of acid that has been put into the bath and is a combination of both free and total acid and that which has been "neutralized" through reaction and combination with iron. In general, this number will tend to climb over time as the bath ages and, when combined with a known production quantity, may be able to give you an indication as to when to dump the bath.

Reagents:

- 1) Phenolphthalein Indicator 1%
- 2) 0.1N NaoH

Titration Method:

Take 10ml sample solution in 250ml conical flask/250ml Beaker.

Add 4-6 drops of 1% Phenolphthalein Indicator.

Start titration with 0.1 N NaoH Colorless to pink end point.

ml used=Total Acid/Point age

Standard: 24-28 points (optimum 26 points)

Correction: 2.08ml per liter ZINPO-24 increase in 01 point age.

OR

2.5 gram per liter ZINPO-24 increase in 01 point age.

Free Acid (FA) Analysis Method:

The Free Acid value is used to tell you how much acid is available to initiate the Phosphate reaction and exists in its original "Active" state.

Too high a value may indicate that the bath would have difficulty initiating the phosphate reaction, the corrective action would be to add Zinpo-24 to bring it in line.

Too low a value indicate could indicate too much ZINPO-24 in the bath which will not "build" coating since it would tend to strip as quickly as it forms.

Reagents:

- Bromophenol blue Indicator
- 0.1N NaoH

Titration Method:

- Take 10ml sample solution in 250ml conical flask/Beaker.
- Add 4-6 drops of Bromophenol Indicator.
- Start titration with 0.1 N NaoH Yellow to Blue end point.
- ml used=Free Acid (5.6-7.0 points) optimum 5.6 points

Correction: Too neutralize free acid point add 0.4gm/liter NaoH (pre diluted in water 10%),

Iron Content Analysis Method:

Iron is constantly being dissolved from parts being zinc phosphated the concentration of iron May build up until the efficiency of solution impair.

This test done by dipping a strip of iron-test paper in phosphate solution. If the paper does not change color, no iron is present in the solution if the paper changes to pink, however, iron is present. And small addition of (Booster-Acc) are then made until an iron test paper shows no change.

To find out how much iron present in phosphate solution need to do under mention test.

Reagents:

- 1) 50% Sulfuric Acid
- 2) 0.18 N Potassium permanganate

Titration Method:

- Take 10ml sample solution in 250ml conical flask/Beaker.
- Add 50 ml distilled water.
- Add 1ml Sulfuric acid 50%.
- Start titration with 0.18 N potassium permanganate until a pink color persists for 15 seconds.

01 ml use of 0.18 N Potassium permanganate=0.1% Iron.

If iron content exceed 1% solution of bath need to discard.

Trouble Shooting Guide:

Poor Cleaning	Low Degreasing Salt Concentration. Low Temperature. Excessive oil, scales of buffing compound.
Low Phosphate Coating Weight	Insufficient Time in process Low Temperature Poor Cleaning Poor Steel Quality
Powder Coating (not paint)	Excessive Sludge High Temperature High Concentration of Phosphate Insufficient post Phosphate rinse
Non-Uniform Coating	Poor Cleaning Excessively high dry-off oven temperature High pH Variations in substrate
Flash Rusting	Low Coating Weight Low pH of phosphate bath Slow dry off Non-Uniform phosphate coating Excessively high dry-off oven temperature Drying between phosphate and rinse stop Off line with work in progress
Loss of Coating Adhesion	Hot post phosphate rinse Contaminated final rinse High pH of Final rinse Poor phosphate coating