HP PHOS ZN 1400

IMMERSION ZINC PHOSPHATE 1200-1600 Mg/Sf.

TECHNICAL DATA SHEET

HP PHOS ZN 1400 is a medium immersion zinc phosphate formulated to provide an excellent basis for painting and rubber bonding

HP PHOS ZN 1400 will deposit in the 1200-1600 mg/sq ft of crystalline zinc phosphate

HP PHOS ZN 1400 is an excellent lubricant carrier to provide lubricity for tube and wire drawing.

OPERATIONS SUMMARY:

Time	5 – 15 minutes
Temperature	160 – 190 °F (71 – 87 °C) 167 – 194 °F (75 – 90 °C) Normal
Concentration:	
HP PHOS ZN 1400	4.0 – 7.2% by volume
Iron	0 – 5 pts.
Coating Weight Range	1200 - 1600 mg/sq ft^2

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MAKE-UP PROCEDURE:

1. Fill the tank with water to approx 75.0% of required operation level.
2. Heat to approximately 120 °F.
3. Add 4.0% by volume of **HP PHOS ZN 1400** and mix well.
4. Fill to full operating level with water, heat to operating temperature (167 - 194 °F) and begin operation.

CONCENTRATION CONTROL METHOD:

Regular analysis of the **HP PHOS ZN 1400** bath for correct chemical concentration is recommended (e.g., once every 4 hours for heavy work loads to once every 8 hours for light work loads).

HP PHOS ZN 1400 concentrate is used to maintain the total acid level. Total acid should be maintained in ratio to the level of iron in the bath. See the chart below:

Iron Points	HP PHOS ZN 1400 CONCENTRATION
0 - 1	4.0%
1 - 2	4.8%
2 - 3	5.6%
3 - 4	6.4%
4 - 5	7.2%

Iron Analysis:

Reagents:
0.2N Potassium Permanganate ($KMnO_4$)
50% Sulfuric Acid (H_2SO_4)

Procedure:
1. Pipette a 10 ml sample of the phosphate solution to an Erlenmeyer flask.
2. Add 10-15 drops of 50% (H_2SO_4).
3. Titrate sample with 0.2N ($KMnO_4$) from a clear to pink endpoint.
4. Calculation:

ml 0.2N KMnO4 = pts of iron.

Total Acid Analysis:

Reagents:
0.1N (NaOH) Sodium Hydroxide
Phenolphthalein Indicator

Procedure:
1. Pipette a 10 ml sample of the phosphate solution to an Erlenmeyer flask.
2. Add 3-4 drops of phenolphthalein.
3. Titrate sample with 0.1N (NaOH) to pink endpoint.
4. Calculation:

Mls titrated = Total Iron Points
Mls titrated x 0.165 = % concentration of **HP PHOS ZN 1400**

TYPICAL PROCESSING CYCLE FOR PHOS AND OIL:

Stage	Operation
1	Clean
2	Rinse
3*	Pickle
4	Rinse
5	Phosphate
6	Rinse
7	Chrome or Chrome-free rinse
8	Oil

*Optional - Consult **Haviland Products Company** representative

EQUIPMENT:

Tanks may be constructed of mild steel. For maximum life, 316 stainless steel is recommended. Heating coils should be stainless steel.

SAFETY PRECAUTIONS:

Proper handling information is labeled on all Haviland products. All personnel using subject products should familiarize themselves with these instructions before use. Please consult the Material Safety Data Sheet for more details on the safe handling of this product.

WASTE DISPOSAL:

Wastes must be tested using methods described in 40 CFR Part 261. It is the generator's responsibility to determine if the waste meets applicable definitions of hazardous wastes. Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

When empty, containers may still be hazardous because of product residue. All labeled hazard precautions must be observed.

NON-WARRANTY:

The data contained in this bulletin is believed by Haviland Products Company to be true, accurate and complete. However, since final methods of use for this product are in the hands of the customer and beyond our control, we cannot guarantee that the customer will obtain the results described in this bulletin, nor can we assume any responsibility for the use of this product by the customer in any process, which may infringe the patents of third parties.