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# ZINC-CHRO-SHIELD® OS

TECHNICAL DATA  
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## ZINC-CHRO-SHIELD® OS *A HIGH-PERFORMANCE ORGANIC SEALER*

ZINC-CHRO-SHIELD® OS	provides extended corrosion protection to passivated zinc and zinc-alloy finishes.
ZINC-CHRO-SHIELD® OS	provides a self-healing mechanism to trivalent passivated surfaces.
ZINC-CHRO-SHIELD® OS	provides over 350 hours of salt spray protection over high performance trivalent passivates to less than 5% white corrosion.
ZINC-CHRO-SHIELD® OS	is used as a final rinse, so there is no additional equipment required.
ZINC-CHRO-SHIELD® OS	operates at room temperature to 140° F (60° C).
ZINC-CHRO-SHIELD® OS	has very low viscosity and produces very thin coatings making it suitable for both rack and barrel operations. *

\* NOTE: ZINC-CHRO-SHIELD® OS reduces adhesion for paint, powder and e-coat, and reduces electric conductivity.

## OPERATING PARAMETERS

	<u>RANGE</u>	<u>OPTIMUM</u>
Zinc-Chro-SHIELD® Concentration:	3 - 100% by volume	7 - 12% by volume rack 10 - 20% by volume barrel
Dip Time:	15 - 45 seconds	30 seconds
pH:	10.0 - 11.0*	
Temperature:	60 - 140° F (16 - 60° C)	
Drying Temperature:	120 - 140° F (50 - 60° C)	

NOTE: De-ionized water is recommended for make-up, city water may reduce tank life.

\*Adjust pH only by adding additional ZINC-CHRO-SHIELD® OS

## EQUIPMENT

### TANKS

Polypropylene, PVC, carbon steel and stainless-steel tanks may be used.

### HEATING/COOLING

Plain steel or stainless-steel.

## TYPICAL CYCLE

1. PLATE
2. RINSE
3. PASSIVATE
4. RINSE
5. ZINC-CHRO SHIELD® OS
6. DRY

## ANALYTICAL PROCEDURE

**Zinc-Chro-SHIELD® OS working solutions can be replenished using either of two methods:**

### METHOD 1: REPLENISHMENT BY ANALYSIS

#### pH:

Use an electronic pH meter or pH paper to measure the pH at least twice per shift.

#### Titration Procedure:

1. Pipette a 5 mL sample of working sealant solution into a 250 mL Erlenmeyer flask.
2. Add 5 drops of Bromophenol Blue indicator solution to the flask.
3. Titrate with 0.1N Sulfuric acid from a blue to a permanent yellow.

FACTOR: (mLs. of 0.1 N Sulfuric Acid-1.1) X 3.38 = % ZINC-CHRO-SHIELD® OS in dip tank

### METHOD 2: REPLENISHMENT BY DRAGOUT DETERMINATION

**EXAMPLE:** The drag-out per day for an average barrel plating tank is 5% by volume. If the plating tank is 5 times the size of the final rinse tank, the final rinse tank will lose 25% by volume per day. Since the optimum initial charge of ZINC-CHRO-SHIELD® is 5% by volume (10 gallons for a 200-gallon tank), then 25% of this initial charge or 2.5 gallons must be added each day (along with water to keep the total volume at 200 gallons).

The drag-out per day for an average rack plating tank is 1% by volume. Using the same calculation as above for a 200-gallon final rinse tank and plating tank 5 times its size, the final rinse will lose 5% by volume per day. This means that ½ gallon of ZINC-CHRO-SHIELD® must be added each day.

**NOTE:** A technical representative from Columbia Chemical can help you determine the addition requirements for your particular plating operation.

## *HANDLING & STORAGE*

Columbia Chemical recommends referring to the specific product Safety Data Sheets for safety, handling, and storage precautions.

## *NON-WARRANTY*

The data contained in this bulletin is believed by Columbia Chemical Corp. to be accurate, true, and complete. Since, however, final methods of use of 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 responsibility of the use of this product by the customer in any process which may infringe the patents of third parties.

