Mi-Phos™ CP Sealer

Mi-Phos CP Sealer is a concentrated acidic solution which is used to seal the Mi-Phos phosphate coating as well as provide added corrosion resistance to the finished part.

Features & Benefits

Meets MIL-DTL-16232	Conforms to phosphating specification

Operating Conditions

EQUIPMENT

The processing tank, pump and piping for the Mi-Phos CP Sealer solution can be constructed of mild steel. Nozzles should be constructed of stainless steel for longer life; however, mild steel can be used.

Processing sequence

Mi-Phos CP Sealer solution is applied to the phosphate parts then dried on by forced heat or air dry.

Parts that have been phosphated and rinsed are introduced to Mi-Phos CP Sealer solution for 30 to 60 seconds at room temperature to 160°F.

A working solution of Mi-Phos CP Sealer is made up by adding 3 to 6 fluid ounces of Mi-Phos CP Sealer concentrate to 100 gallons of water.

The sealer solution can then be used until the ratio gets to 7 parts Total Acid to 1-part Free Acid. At this point, the sealer solution should be discarded and a new one made up.

Titration Method

Control procedure

Mi-phos CP sealer analysis

EQUIPMENT REQUIRED CHEMICALS REQUIRED

25 mL Burette	6 N Hydrochloric Acid Solution
10 mL Graduated Cylinder	15 %w/w Potassium Iodide Solution
25 mL Graduated Cylinder	0.1 N Sodium Thiosulfate Solution
250 mL Graduated Cylinder	20 %w/w Thyodene Soluble Starch Solution
500 mL Erlenmeyer Flask	

1. Using a 250 mL graduated cylinder, pour a 250 mL cooled sample of the Mi-Phos CP Sealer bath into the 500 mL Erlenmeyer flask.

2. Add 10 mL of 6 N Hydrochloric Acid solution and swirl to mix.

3. Add 20 mL 15% Potassium Iodide solution and swirl to mix.

4. Let stand for 5 minutes.

5. Titrate using 0.1 N Sodium Thiosulfate solution to just a straw yellow color. Do not over titrate.

6. Add 1-2 mL of the Thyodene starch indicator. Solution will turn dark blue.

7. Continue titrating dropwise until blue just disappears. Solution will be clear or slightly green in color.

8. Record the mL of 0.1 N sodium thiosulfate used.

Calculate the oz/100 gal of Mi-Phos CP Sealer as follows:

Mi-Phos C Sealer (oz / 100 Gal) = mL 0.1 N Sodium Thiosulfate Solution X 0.66

<u>Free Acid Analysis</u>

EQUIPMENT REQUIRED	CHEMICALS REQUIRED
25 mL Burette	Bromophenol Blue Indicator
100 mL Graduated Cylinder	Phenolphthalein Indicator
250 mL Erlenmeyer Flask	0.1 N Sodium Hydroxide Solution

1. Measure out a 25-milliliter sample of the Mi-Phos CP Sealer solution into a 250 mL beaker.

2. Add 4 to 5 drops of Bromo Phenol Blue Indicator.

3. Add 0.1 N Sodium Hydroxide solution, counting the drops until the solution color changes from yellow to blue end point.

Range: 3 to 7 drops 0.1 N Sodium Hydroxide

Total Acid Analysis

EQUIPMENT REQUIRED
25 mL Burette
100 mL Graduated Cylinder
250 mL Erlenmeyer Flask

CHEMICALS REQUIRED
Phenolphthalein Indicator
0.1 N Sodium Hydroxide Solution

1. Measure out a 25-milliliter sample of the Mi-Phos CP Sealer solution into a 250 mL beaker.
2. Add 5 drops of Phenolphthalein Indicator.
3. Add 0.1 N Sodium Hydroxide solution, counting the drops until the solution color changes from yellow to red end point.

   Range: 10 drops 0.1 N Sodium Hydroxide, minimum.

   When the Total Acid reaches 7 (seven) times the Free Acid concentration, the solution should be discarded, and a new bath made up.

Waste Disposal

Mi-Phos C Sealer contains chromic acid. Our Aquapure team can assist you with the appropriate wastewater disposal method.

Caution

Solution should be adequately exhausted. Do not get in eyes, on skin or clothing. Do not breathe the mist from the solution. In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. For eyes, get medical attention. Read and understand OSHA safety data sheet for this product.

WARNING...POISON - DANGER - STRONG OXIDANT - CONTAINS CHROMIC ACID

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For more information on this process,
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