Product Bulletin

Product Name: Acid Salt PB
Product Code: 2541007
Revision Date: December 21, 2023

Mi-Phos™ C Sealer

Mi-Phos C Sealer is a concentrated acidic solution which is used to seal the Mi-Phos phosphate coatings 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 C 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 C 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 C Sealer solution for 30 to 60 seconds at room temperature to 160°F.

A working solution of Mi-Phos C Sealer is made up by adding 3 to 6 fluid ounces of Mi-Phos C 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.

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Titration Method

Control procedure

Mi-phos C 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 C 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 C Sealer as follows:

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

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Total and Free Acid Analysis

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. Pour a 100 mL cooled sample of the Mi-Phos C Sealer bath into a 250 mL Erlenmeyer flask.

2. Add 10 drops of bromophenol blue indicator and 10 drops of Phenolphthalein indicator and swirl to mix.

3. Titrate slowly using 0.1 N Sodium Hydroxide solution to a deep green endpoint. Record the volume of titrant. This represents the Free Acid.

4. Continue titrating to a purple endpoint. Record volume of 0.1 N Sodium Hydroxide solution used. This volume represents the Total Acid.

5. Calculate the Total Acid: Free Acid Ratio as follows:

Total Acid: Free Acid = (mL in Step 4) / (mL in Step 5)

Ratio of total acid to free acid must be LESS THAN 7.1.

If ratio is 7.1 or greater, bath should be dumped and made up fresh.

Waste Disposal

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

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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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