CRESTCHEMICALS

PPC-45
Zinc Manganese Phosphate Dip for Iron and Steel

Description
Crest PPC-45 is used as a coating on the frictional surfaces of gears, bearings, crankshafts, valve lifters, tool joints, valve seats, etc. It will prevent galling, scuffing and scoring during break-in periods. A PPC-45 coating is particularly suitable for impregnation with oils, or other lubricants for increased corrosion and friction resistance.

Surface preparation of the metal before phosphating is one of the most important factors in obtaining a quality coating. Surfaces may be cleaned by abrasive blasting or chemicals. A rough metal surface often accelerates the coating formation, producing a fine crystalline coating. Very fine coatings are obtained on grit-blasted, sandblasted, and vapor-blasted surfaces. Machined areas, on the other hand, may produce non-uniform, shiny coatings.

When chemical cleaning is the method desired, we recommend Crest PAC-96 at a concentration of 6 to 8oz/gallon, and a temperature of 160° to 200°F. After cleaning, parts must be thoroughly rinsed in clean water before phosphating. Most phosphate systems that are not getting good results can trace all their problems to the rinse stage.

Specifications
This product meets or exceeds all qualifications for the following:

- A-A-59267 Type Z, M
- MIL-P-50002B Type Z, M
- TT-C-490F Type I Class A
- MIL-DTL-16232G Type Z

Method of Use
Application Methods
- Immersion
- Flood

Mixing Instructions
- The phosphating bath is made up by addition of 8 to 20 gallons of PPC-45 to each 100 gallons of clean water.

Application Instructions
- Immerse the clean part in the PPC-45 bath for 15 to 30 minutes at 165° to 190°F.
  - **Paint Base Coating:** Immersion time should be restricted to 5 to 10 minutes. This will produce a 500 to 1500 mg/sq. ft. If the coating is not smooth and tight enough, contact your Crest representative, as a nitrite additive may be needed.
  - **Oil Base Coating:** Needs to be a heavier coating above 2000 mg/sq. ft. This will take 15 to 30 minutes to produce, and will have medium sized crystals.

Adjustments
- Water is to be replaced as it evaporates from the bath.
- Sludge should be removed from the bath every four weeks.

Equipment
- Tanks should be constructed of 316 stainless steel. 304 stainless steel or mild steel can be used as well.
- Heaters may be either steam heated plate coils constructed of stainless steel or gas fired burner tube types constructed of mild steel.

Warranty and Liability Disclaimer
The above information and recommendations concerning this product are based upon our laboratory tests and field use experience; however, since conditions of actual use are beyond our control, any recommendations, or suggestions, are made without warranty, expressed or implied. Manufacturer's and seller's sole obligation shall be to replace that portion of the product shown to be defective. Neither shall be liable for any loss, damage or injury, direct or consequential, arising out of the use of this product.

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Test Kit Adjustments

- Use the Total Acid Test and the Free Acid Test to verify that acid content is at the desired level. If the acid content is low, add more PPC-45 solution to raise the total acid content approximately 0.25 points.
- Higher coating requirements may require steel wool to be added to the tank. If this is the case, dissolve ½ pound steel wool per 100 gallons of solution when the tank is at or below 160°F. Use the Ferrous Iron Test to verify that the iron content of the bath is between 4 to 15 ml.

General Operating Parameters

Concentration	7 to 11% by volume
Temperature (°F)	165° to 200°F
Time	15 to 20 minutes
Total Acid	7 to 11 ml of 1.0N NaOH = 7 to 11% 70 to 110 ml of 0.1N NaOH = 7 to 11%
Free Acid	2 to 4 ml of 1.0 N NaOH = 2 to 4% 20 to 40ml of 0.1N NaOH = 2 to 4%

Caution

This product contains acidic ingredients. Avoid contact with, skin, eyes, and clothing. Refer to product labels and Safety Data Sheets for precautionary and handling information. Product should be stored at no lower than 50°F and no higher than 100°F.

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