Hubfos 12-S

Product Code: 2201004
Revised Date: 01/12/2010

Hubfos 12-S
Liquid Iron Phosphate For Spray And Immersion Application

DESCRIPTION

Cleaner and Iron Phosphate for Steel, Aluminum and Zinc

FEATURES AND BENEFITS

- Easy additions with Liquid Concentrate
- Temperature 110 to 170F (37 to 77C)
- Cleans light soils and phosphates in one step
- Excellent for paint adhesion
- Paint Adhesion promoter

TYPICAL APPLICATIONS

- Pre-Paint and Powder Coat
- Cast iron
- Zinc die cast
- Aluminum
- Automotive
- Hand Tools

Hubfos 12-S is a water soluble liquid which cleans and produces an iridescent iron phosphate coating on steel and cast iron alloys (gray, ductile, malleable, etc.) in one operation. **Hubfos 12-S** may also be used on zinc die-casting, galvanized surfaces and aluminum alloys as a cleaner-phosphater.

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Hubfos 12-S has been formulated to be used in spray washer and immersion applications prior to painting (oil or water-base), Powder coating, or the application of an organic coating. **Hubfos 12-S** meets Federal Specification TT-C-490 Type II.

ADVANTAGES

- Low temperature operation. Saves energy.
- Readily soluble in cold water; no precipitation on the bottom of a tank.
- Versatile; may be used on iron, steel, zinc, galvanized steel and aluminum alloys.
- No special tank linings or heating coils required.
- Use solution ready for operation; no adjustments of pH required.
- Produces a smooth dense phosphate coating; ideal for use with thin paint coating.

OPERATING CONDITIONS FOR SPRAY APPLICATION (3 STAGE)

Concentration:	3 to 6% (volume)
Temperature:	110 to 170F (37 to 77C)

The higher operating temperatures are usually required when the soils are quite heavy or the spray time is brief for the amount of soil on the fabrications.

Time: 30 seconds to 3 minutes.

The longer spray times usually will allow a lower operating temperature (110 to 125F)

EQUIPMENT

Since solutions of **Hubfos 12-S** will have an operating pH of 3.5 to 4.5, conventional mild steel tank and heating coils are satisfactory.

CONVENTIONAL THREE STAGE POWER WASHER CYCLE USING HUBFOS 12-S.

1. 1 to 2 minute spray with a 4 to 5% (volume) solution of **Hubfos 12-S**, 100 to 125F.
2. 30 second cold water spray rinse.
3. 15 second spray rinse with a 0.1% (volume) solution of Phos-Seal NC at room temperature to 160 F.
4. Dry.

NOTE: Spraying pressures should be 20 to 30 psi for all stages.

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OPERATING CONDITIONS FOR IMMERSION APPLICATIONS

Concentration:	5 to 7% (volume)
Temperature:	140 to 180F (60 to 82C)
Time:	4 to 6 minutes
Equipment:	mild steel tanks and heating coils.

NOTE: Mild air agitation of **Hubfos 12-S** solution aids in cleaning.

If the soil on the work is heavy, it is recommended that it be pre-cleaned by degreasing or by alkaline cleaning.

If an alkaline cleaner is used, rinsing must be thorough in order to prevent alkaline carry-over into the Hubfos 12-S solution. The drag-in would rapidly change the pH and prevent the development of the coating.

Adequate coatings may be obtained in a 3% by volume **Hubfos 12-S** at a temperature of 130F in 5 minutes or in a 5% solution at 130F in 3 minutes. Coating weights on steel obtained are in the range of 25 to 55 mg/sq. ft and the process may be used to meet government specification TT-C-490 type II iron phosphate for organic coatings.

1. 5 minute immersion in 5 to 6% (volume) **Hubfos 12-S** at 150 to 180F.
2. Cold water rinse.
3. 15 second immersion in a 0.1% (volume) solution of Phos-Seal NC at room temperature to 160 F.
4. Dry.

CONTROL PROCEDURES

TEST KIT PROCEDURE

The concentration of **Hubfos 12-S** may be determined with a Hubbard-Hall test kit using a 5 ml dropper. Do not use the 1 ml dropper.

1. Fill test bottles 1/4 full with water.
2. Add 5 mls **Hubfos 12-S** solution to the bottle using a graduated cylinder.
3. Add three drops of phenolphthalein indicator to bottle.
4. Add N-72 solution dropwise until the solution turns from colorless to pink.
5. Record number of drops N-72 solution used.

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% (VOLUME) HUBFOS 12-S = 0.27 X NUMBER DROPS N-72.

TITRATION PROCEDURE

1. Pipette 10 ml sample of **Hubfos 12-S** solution into a 250 ml Erlenmeyer flask and dilute with 50 mls of water.
2. Add 3 to 5 drops of phenolphthalein indicator to solution and titrate with 0.1 N sodium hydroxide solution until the solution becomes slightly pink.
3. Record mls 0.1 N sodium hydroxide used.

% (VOLUME) HUBFOS 12-S = .45 X MLS 0.1 N SODIUM HYDROXIDE USED.

THE pH OF **Hubfos 12-S** solution will range from 3.5 to 4.6. The pH should be checked using pH papers.

If the pH of the **Hubfos 12-S** solution should fall below 3.5, use sodium carbonate to raise the ph. If the solution's pH should go higher than 4.6, add phosphoric acid or **Hubfos 12-S** to lower the pH.

Tests of the required addition to raise or lower the pH should be made on a 1 gallon sample.

CAUTION

Hubfos 12-S is a mildly acidic product. Wear protective clothing, gloves and goggles when handling this product. Flush exposed areas immediately with clean cold water. For eyes, flush repeatedly with water and call a physician.

WASTE DISPOSAL

Discharge to a disposal system. In order to be completely informed on the latest regulations for your area, please contact the local authorities.

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WARRANTY

THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.

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