Product Bulletin

Product Name: Hubfos 150
Product Code: 2201019
Revision Date: January 23, 2024

Hubfos 150

Cleaner and organic accelerated iron phosphate that cleans and produces an iridescent iron phosphate coating on steel and other ferrous metals. It may also be used on galvanized surfaces.

Features & Benefits

Mil Spec TT-C-490, Type II	Adheres to federal specifications
Detergent Phosphate	Cleans and phosphates in one step
Coating weight of 80 – 100 mg/ft^2	Excellent paint adhesion

Operating Conditions

Hubfos 150 has been formulated to be used in spray washer and immersion applications prior to painting (oil or water based) powder coating, or the application of an organic coating. Hubfos 150 meets federal specification TT-C-490 Type II.

Spray Application

Concentration	3% – 6%
Temperature	110°F – 170°F
Time	30 sec – 3 min

Higher operating temperatures are required when the soils are heavy, or the spray time is brief for soil on the fabrications.

Longer times will usually allow a lower operating temperature.

Equipment

Since solutions of Hubfos 150 will have a pH of 4.2 to 4.8, conventional mild steel tanks and heating coils are satisfactory.

Conventional Multi-Stage Process Cycle Using Hubfos 150

1. 1 to 2-minute alkaline spray wash in a solution of the appropriate Hubbard-Hall Aquaease cleaner.
2. 20 to 30 second cold water spray rinse.
3. 1 to 2-minute spray with 4 to 5%v/v solution of Hubfos 150° F at 150°F.
4. 20 to 30 second cold water spray rinse.
5. 15 second spray rinse with 0.5%v/v solution of Emerald Seal 308.
6. Forced hot air dry.

Note: Spray pressures should be 15 to 30 psi for all stages.

Immersion Application

Concentration	5% – 10%
Temperature	140°F – 180°F
Time	3 – 6 min
Equipment	Mild steel tanks and heating coils

Note: Mild agitation of Hubfos 150 aids in cleaning.

If the soil on the work is heavy, it is recommended that the part be pre-cleaned by degreasing or alkaline cleaning with the appropriate Hubbard-Hall's Aquaease cleaner. If alkaline cleaning is used, rinsing must be thorough to prevent alkaline carry over into the Hubfos 150 solution. The drag-in would rapidly change the pH and prevent the development of the phosphate coating.

Adequate coatings may be obtained in a 4%v/v solution Hubfos 150 at a temperature of 150°F in five minutes. Coating weights on steel are in the range of 80 to 100 mg/ft2 and the process may be used to meet government specification TT-C-490 Type II iron phosphate for organic coatings.

Titration Method

Equipment Required	Chemicals Required
10mL Pipette	0.5% w/v Phenolphthalein Indicator
50mL Burette	0.1 N Sodium Hydroxide
Burette stands	
250mL Erlenmeyer flask	

1. Pipette 10 mL of Hubfos 150 solution into a 250 mL Erlenmeyer flask.
2. Dilute with 50 mL of water.
3. Add 3 to 5 drops of Phenolphthalein indicator to the solution.
4. Titrate with 0.1 N Sodium Hydroxide solution until solution turns from colorless to pink.
5. Record mL used.

Calculation

Concentration = mL 0.1 N NaOH x 0.390

The pH of Hubfos 150 solution will range from 4.0 to 4.8. If the pH drops below 4.0, add sodium carbonate to raise the pH. If the pH should go higher than 4.8, add phosphoric acid to the Hubfos 150 solution to lower the pH. A gallon sample of the solution should be tested to determine the required additions to raise or lower the pH.

Test Kit Method

Equipment Required	Chemicals Required
4 oz mixing bottle	4 oz 0.72N Sodium Hydroxide
Syringe (5 mL)	4 oz 0.5%w/v Phenolphthalein Indicator

1. Using syringe add 5 mL of Hubfos 150 solution to the mixing bottle.
2. Fill bottle ¼ full of water.
3. Add 3 to 5 drops of Phenolphthalein indicator to the flask.
4. Add 0.72 N Sodium Hydroxide dropwise until solution turns from colorless to pink.
5. Record number of drops used.

Calculation

Concentration = # Drops 0.72 N NaOH x 0.220

The pH of Hubfos 150 solution will range from 4.0 to 4.8. If the pH drops below 4.0, add Sodium Carbonate to raise the pH. If the pH should go higher than 4.8, add phosphoric acid to the Hubfos 150 solution to lower the pH. A gallon sample of the solution should be tested to determine the required additions to raise or lower the pH.

Waste Disposal

For proper disposal options, contact our Aquapure representatives.

Caution

Hubfos 150 is a mildly acidic solution. 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.

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Our People. Your Problem Solvers.

For more information on this process,
please call us at 203.756.5521 or email: techservice@hubbardhall.com

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