



INDUSTRIAL COATINGS

UG50F/50FR

# ULTRAGUARD ATP50F/50FR

## PRETREATMENT TECHNICAL DATA SHEET

### LOW TEMPERATURE IRON PHOSPHATE CONVERSION COATING

#### PRODUCT DESCRIPTION

**ULTRAGUARD ATP50F** is a low temperature iron phosphate for steel, galvanized steel and aluminum substrates prior to painting. It is designed for use after typical alkaline or neutral-based cleaners. The preferred replenished is **ULTRAGUARD ATP 50FR**.

#### TECHNICAL PROPERTIES

	<u>UG50F</u>	<u>UG50FR</u>
Composition:	Liquid	Liquid
Appearance:	Clear Yellow	Clear Yellow
Recommended Concentrations:	3-6% by volume	NA
Recommended Temperatures:	70 <sup>0</sup> F-125 <sup>0</sup> F	70 <sup>0</sup> F-125 <sup>0</sup> F

#### PRODUCT ADVANTAGES

- Concentrated liquid diluted for use that coats various metal surfaces with an iron phosphate conversion coating to improve paint adhesion and provide additional corrosion resistance
- Offers simplicity of operation and lower costs when used in spray or immersion phosphate equipment
- Operates at temperatures down to 70°F (21°C).
- Good for multi-metal applications

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### USE & CONTROL INSTRUCTIONS:

#### Operating Properties (Typical):

- Application: Immersion or spray
- Operating Concentration: 3%-6%/volume
- Operating pH: 3.8-5.2
- Operating temperature: 70°F-125°F (21-52°C)
- Operating time: 60-90 seconds

#### Charge Instructions:

Add 5 gallons of **ULTRAGUARD ATP50F** per 100 gallons tank volume.

#### Charge Details:

- 1) Fill the clean tank to approximately  $\frac{3}{4}$  full of the operating solution with fresh water.
- 2) Bring solution to operating temperature, around 70-80°F.
- 3) With the circulating pump in operation, add 5 gallons of **ULTRAGUARD ATP50F** per 100 gallons of operating volume to charge the bath to a concentration of 5% by volume.
- 4) Add 1.0 gallon of CHEMFIL BUFFER per 100 gallons of operating volume to adjust the pH to approximately 4.5
- 5) Add sufficient water to bring the solution to the proper operating level and recheck pH.
- 6) Adjust pH if needed.
  - a) To raise the pH approximately 0.1 units, add 50 ml of CHEMFIL BUFFER per 100 gallons of operating solution.
  - b) To lower the pH approximately 0.1 units, add 350 ml of **ULTRAGUARD ATP50F or ULTRAGUARD ATP 50FR**

**CAUTION: DO NOT PIPETTE BY MOUTH**

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### Analysis Procedures:

#### Total Acid:

#### Equipment needed:

- 10-ml pipette and bulb
- Burette Assembly
- 150-ml beaker

#### Reagents needed:

- Phenolphthalein Indicator
- 0.1N Sodium Hydroxide

#### Procedure:

1. Using a 10-ml pipette, transfer a 10-ml sample of the **ULTRAGUARD ATP50F/50FR** solution to a clean 150-ml beaker.
2. Add 4 to 5 drops of Phenolphthalein Indicator.
3. Titrate with 0.1N Sodium Hydroxide using an automatic burette, stirring continuously, until the solution remains pink for at least twenty seconds. If the endpoint is difficult to see due to bath, add 25 ml of water to dilute the cloudiness.
4. The number of ml of 0.1N Sodium Hydroxide required to reach the endpoint equals the Total Acid in points of the **ULTRAGUARD ATP50F/50FR** bath. The relationship between Total Acid and concentration is as follows (only for a pH adjusted bath, not for a fresh charged bath):

### ULTRAGUARD ATP50F/50FR

<u>Total Acid, mls</u>		<u>Concentration by Volume</u>
4.5	=	3.0%
6.0	=	4.0%
7.5	=	5.0%
9.0	=	6.0%

The recommended range for Total Acid is 6.0 - 7.5 mls.

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### Calculation:

Number of mls of 0.1N Sodium Hydroxide X 0.66 conversion to concentration of  
**ULTRAGUARD ATP50F/50FR**

### pH Control:

#### **Equipment needed:**

- pH meter (Follow the manufacturer's recommendations for operation)

### Reagents needed:

- pH buffer solutions (4.0 and 7.0)

### Procedure:

After the bath has been charged with **ULTRAGUARD ATP50F**, pH should be checked with an electronic pH meter, preferably one with temperature compensation.

- To raise the pH approximately 0.1 units, add 50 ml of CHEMFIL BUFFER per 100 gallons of operating solution.
- To lower the pH approximately 0.1 units, add 350 ml of **ULTRAGUARD ATP50FR** per 100 gallons of operating solution.

### Troubleshooting:

When the part throughput is high, the activator can be depleted slightly faster than other ingredients and result in a streaky phosphate coating, hence, the occasional addition of ULTRAGUARD ADDITIVE may be needed.

### Equipment:

All tanks and equipment, except for phosphate and pickle stages, may be constructed of mild steel. The phosphate stage may be constructed of 3/8" mild steel; however, for prolonged life, 316 stainless steel is recommended.

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#### TECHNICAL DATA SHEET DISCLAIMER—INDUSTRIAL COATINGS:

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