



INDUSTRIAL COATINGS

(UGATP50/50R)

ULTRAGUARD ATP50/50R

AMBIENT TEMPERATURE IRON PHOSPHATE CONVERSION COATING

PRODUCT DESCRIPTION

ULTRAGUARD ATP50 is a low temperature iron phosphate for steel surfaces prior to painting. The operating temperature range is 70°F to 140°F. It is designed for use after typical alkaline or neutral cleaners and used as a replenisher to the bath.

PRODUCT ADVANTAGES

- Concentrated liquid diluted for use that coats steel surfaces with an iron phosphate conversion coating to improve paint adhesion and provide excellent corrosion resistance.
- Offers simplicity of operation and lower costs when used in spray or immersion phosphating equipment at temperatures as low as 70°F.

TECHNICAL PROPERTIES

Composition:	Liquid
Appearance:	Clear Yellow
Odor:	Acidic
Specific Gravity:	50=1.16; 50R=1.15
Pound per Gallon:	50=9.7; 50R=9.5
Flash Point:	None
Foaming Tendency:	None to slight
Recommended Diluent:	Water
Behavior in Hard Water:	Good
Rinsability:	Good
Biodegradable Surfactants:	N/A
Recommended Concentration:	3-6%/volume
Recommended Temperatures:	70°F-140°F
pH (concentrate):	2.1-2.7
pH (working solution):	3.8-5.2
Concentrate Stability:	6 months

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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-140°F
- Operating time: 60-90 seconds

Specific process conditions may warrant operating the above parameters outside of the typical ranges. Please consult your PPG representative.

Charge Instructions:

Add 5 gallons of **ULTRAGUARD ATP50** 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 ATP50** per 100 gallons of operating volume to charge the bath to a concentration of 5% by volume.
- 4) Add 1.1 gallon of **CHEMFIL BUFFER** per 100 gallons of operating volume to adjust the pH to approximately 4.0.
- 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 35 ml of **CHEMFIL BUFFER** per 100 gallons of operating solution.
 - b) To lower the pH approximately 0.1 units, add 150 ml of **ULTRAGUARD ATP50**.

Analysis Procedures:

CAUTION: DO NOT PIPETTE BY MOUTH!

Total Acid:

Equipment needed:

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

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USE & CONTROL INSTRUCTIONS (continued):

Reagents needed:

- Phenolphthalein Indicator
- 0.1N Sodium Hydroxide

Procedure:

1. Using a 10-ml pipette, transfer a 10-ml sample of the **ULTRAGUARD ATP50/50R** 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 ATP50/50R** bath. The relationship between Total Acid and concentration is as follows (only for a pH adjusted bath, not for a fresh charged bath):

<u>Total Acid, mls</u>		<u>Concentration by Vol</u>
6.0	=	3.0%
8.0	=	4.0%
10.0	=	5.0%
12.0	=	6.0%

Calculation:

Number of mls of 0.1N Sodium Hydroxide X 0.5 = conversion to concentration of **ULTRAGUARD ATP50/50R**.

pH Control:

Equipment needed:

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

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USE & CONTROL INSTRUCTIONS (continued):

Reagents needed:

- pH buffer solutions (4.0 and 7.0)

For ordering information, please refer to the Reagent Reference list available from your PPG representative.

Procedure:

After the bath has been charged with Ultraguard ATP50 and Chemfil Buffer, pH should be checked with an electronic pH meter, preferably one with temperature compensation.

- To raise the pH approximately 0.1 units, add 35 ml of **CHEMFIL BUFFER** per 100 gallons of operating solution.
- To lower the pH approximately 0.1 units, add 185 ml of **ULTRAGUARD ATP50R** 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** (UGA) may be needed. Please call your PPG representative for a recommended addition rate.

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.

PRECAUTIONS:

Consult the most recent *Material Safety Data Sheets* for health and safety information relative to the safe handling and storage of this material.

Emergency 24 hour CHEMTREC number: 800.424.9300