



INDUSTRIAL COATINGS

UGATP50M

ULTRAGUARD ATP50M

PRETREATMENT TECHNICAL DATA SHEET

LOW TEMPERATURE IRON PHOSPHATE CONVERSION COATING

PRODUCT DESCRIPTION

ULTRAGUARD ATP50M is a premium low temperature iron phosphate used for steel surfaces prior to painting. It is designed for use in a five to six stage spray systems. **ULTRAGUARD ATP50M** requires a minimum of one alkaline or neutral cleaning stage and a warm water rinse preceding it.

TECHNICAL PROPERTIES

Composition:	Liquid
Appearance:	Clear Yellow
Recommended Concentrations:	3-6% by volume
Recommended Temperatures:	70 ⁰ F-125 ⁰ F

PRODUCT ADVANTAGES

- Ambient temperature operation.
- Reduces operational costs.
- A concentrated liquid when diluted and applied to a clean steel surface produces a uniform protective pretreatment layer.
- Promotes paint adhesion and corrosion protection.
- When used in combination with an appropriate final sealer (post-rinse), the corrosion resistance of painted substrates is enhanced.
- Used to charge and replenish the operating bath.

FEB12/REV10

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USE & CONTROL INSTRUCTIONS:

Operating Properties (Typical):

- Concentration: 3 – 6 % by volume.
- pH: 3.8 – 5.5
- Temperature: 70°F – 125°F (18°C – 52°C)
- Contact Time: 30 – 120 Seconds
- Application: Spray or Immersion

Typical Parameter Setup:

- Concentration: 4 % by volume.
- pH: 4.4 – 4.8
- Temperature: Ambient temperature
- Application (I): 30 – 60 seconds, spray
- Application (II): 60 – 120 seconds, immersion

Specific process conditions may require operating the above parameters outside of the normally specified ranges. For example, short dwell times may require operating at higher chemical concentrations. Please consult your PPG representative to establish the optimum operating parameters.

Charge Instructions:

Add 4.0 gallons of **ULTRAGUARD ATP50M** per 100 gallons of 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 4 gallons of **ULTRAGUARD ATP50M**
- 4) Add 0.5 gal of **CHEMFIL BUFFER** to adjust the pH to approximately 4.2.
- 5) Continue filling the tank to the operating level with fresh water,
- 6) Mix well and recheck pH, adjust pH if needed.

The amounts are good only in the operating range of 4.00-5.4 pH

- a) To raise the pH by 0.1 units, add 38 ml of **CHEMFIL BUFFER**
- b) To lower the pH by 0.1 units, add 165 ml of **ULTRAGUARD ATP50M**.

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CAUTION: DO NOT PIPETTE BY MOUTH!

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 ATP50M** 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 aging, 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 ATP50M** bath. The relationship between Total Acid and concentration is as follows (only for a pH adjusted bath, not for a freshly charged bath):

ULTRAGUARD ATP50M Replenishment chart:

Total Acid (Pts.)	Percent Concentration of ULTRAGUARD ATP50M
10.5	6%
8.8	5%
7.0	4%
5.3	3%
3.5	2%
1.8	1%

To raise the concentration of **ULTRAGUARD ATP50M** by one point, add 0.6 gallons (2250 mls.) to each 100 gallons of tank volume.

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pH Adjustment:

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 ATP50M** and **CHEMFIL BUFFER**, pH should be checked with an electronic pH meter, preferably one with temperature compensation.

The amounts are good only in the operating range of 4.00-5.4 pH

- To raise the pH approximately 0.1 units, add 38 ml of **CHEMFIL BUFFER** per 100 gallons of operating solution.
- To lower the pH approximately 0.1 units, add 165 ml of **ULTRAGUARD ATP50M** 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.

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, 316L stainless steel is recommended.

TECHNICAL DATA SHEET DISCLAIMER—INDUSTRIAL COATINGS:

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PPG PRETREATMENT
23000 ST. CLAIR AVE
EUCLID OH 44117
216 486 5300
www.ppg.com