



INDUSTRIAL COATINGS

UGATP31L

ULTRAGUARD ATP31L

PRETREATMENT TECHNICAL DATA SHEET

LOW TEMPERATURE IRON PHOSPHATE CLEANER COATER / CONVERSION COATING

PRODUCT DESCRIPTION

ULTRAGUARD ATP31L is a dual action chemical process which can simultaneously clean and phosphate steel surfaces at temperatures ranging from 80°F to 115°F prior to painting.

TECHNICAL PROPERTIES

Composition:	Liquid
Appearance:	Clear Yellow
Recommended Concentrations:	3-5% by volume
Recommended Temperature:	80°F-115°F (27°C-46°C)

PRODUCT ADVANTAGES

- Low temperature operation
- Low operational costs
- Concentrated liquid, when diluted, cleans and coats the steel surface with an iron phosphate coating
- Improves paint adhesion and provides excellent corrosion resistance
- One product for make-up and replenishing

FEB12/REV4

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USE & CONTROL INSTRUCTIONS:

Typical Operating Setup:

- Concentration: 4 % by volume.
- pH: 4.4 – 5.0
- Temperature: 80⁰F - 95⁰F (27⁰C – 35⁰C)
- Application (I): 60 – 90 seconds, spray

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 per 100 gallon bath:

Add 4.0 gallons of **ULTRAGUARD ATP31L** 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 80⁰F-95⁰F.
- 3) With the circulating pump in operation, add 4 gallons of **ULTRAGUARD ATP31L** for every 100 gallons of bath volume.
- 4) Add 0.25 gal (1 liter) of **CHEMFIL BUFFER** to adjust the pH to approximately 4.4.
- 5) Mix well and continue filling the tank to the operating level with fresh water. Recheck pH.
- 6) Adjust pH if needed.
 - a) To raise the pH by 0.1 units, add 21.5 ml of **CHEMFIL BUFFER** for each 100 gallons of operating solution.
 - b) To lower the pH by 0.1 units, add 330 ml of **ULTRAGUARD ATP31L** per 100 gallons of solution.

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Analysis Procedures:

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 ATP31L** 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 ATP31L** bath. The relationship between Total Acid and additions needed is shown in the table below for samples at the pH listed. (For a freshly charged bath, adjust the pH up by adding Chemfil Buffer before obtaining a sample.)

ULTRAGUARD ATP31L Replenishment chart:

Total Acid (mls or Pts.) at pH 4-5.4	Gallons of UGATP31L needed per 100 gallons of tank volume
7.4	0
6.5	0.5
5.6	1
4.6	1.5
3.7	2
2.8	2.5
1.9	3

To raise the concentration of **ULTRAGUARD ATP31L** by one point, add 0.54 gallons (2.0 liters) to each 100 gallons of tank volume.

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pH Adjustment:

(For new bath containing only **ULTRAGUARD ATP31L** see Charge Instructions)

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 ATP31L** 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 21.5 ml of **CHEMFIL BUFFER** per 100 gallons of operating solution.
- To lower the pH approximately 0.1 units, add 330 ml of **ULTRAGUARD ATP31L** 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.

TECHNICAL DATA SHEET DISCLAIMER—INDUSTRIAL COATINGS:

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