

# ULTRAGUARD ATP 31



INDUSTRIAL COATINGS

## AMBIENT TEMPERATURE IRON PHOSPHATE CLEANER COATER / CONVERSION COATING

### PRODUCT DESCRIPTION

**ULTRAGUARD ATP31** is a dual action chemical process, which can simultaneously clean and phosphate steel surfaces at temperatures ranging from 70°F to 115°F prior to painting.

### PRODUCT ADVANTAGES

**ULTRAGUARD ATP31** is a concentrated liquid material that coats the steel surface with an iron phosphate coating to improve paint adhesion and provide excellent corrosion resistance.

**ULTRAGUARD ATP31** offers simplicity of operation, lower costs and improved safety when used in spray phosphating equipment at temperatures as low as 70°F.

### TECHNICAL PROPERTIES

Composition:	Liquid
Appearance:	Clear Yellow
Odor:	Acidic
Specific Gravity:	1.18
Pound per Gallon:	9.8
Flash Point:	None
Foaming Tendency:	None to slight
Recommended Diluent:	Water
Behavior in Hard Water:	Good
Rinsability:	Good
Recommended Concentration:	3-5% by volume
Recommended Temperatures:	70°F – 115°F
Approximate pH (concentrate):	2.4-2.7
pH (working solution):	3.8 – 5.2
Stability:	6 months

# ULTRAGUARD ATP31

## USE & CONTROL INSTRUCTIONS:

### THREE STAGE SPRAY APPLICATION:

- Stage #1     **ULTRAGUARD ATP31**- 5% by volume  
pH control 3.8 – 5.2 or acid consumed control 0.1-0.9 points  
70°F - 115°F for one minute to 90 seconds (room temperature preferred)  
Total Acid range 10.0 – 12.5 points
- Stage #2     Water rinse overflowing, 70 - 100°F for 30 seconds.
- Stage #3     Water rinse or CHEMSEAL rinse. Consult your PPG representative for recommendations.

**Note:** If the spray equipment consists of four or more stages, your PPG representative can recommend the most advantageous way to utilize those facilities.

### MAKE-UP

Fill the processing tank approximately 3/4 full with water. Bring the solution to operating temperature, around 70-80°F. With the circulating pump in operation, add the required amount of **ULTRAGUARD ATP31** to charge the bath to a concentration of 5% by volume. (Five gallons of **ULTRAGUARD ATP31** per 100 gallons of water.)

Add 0.5 gallon Chemfil Buffer to adjust the pH close to 4.0. Add sufficient water to bring the solution up to the proper operating level and recheck pH. Check pH and adjust, if needed.

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## USE & CONTROL INSTRUCTIONS: (continued)

### CONTROL PROCEDURES

#### Total Acid (TA)

1. Using a 10-ml pipette, transfer a 10-ml sample of the **ULTRAGUARD ATP31** solution to a clean 150-ml beaker.
2. Add 4 to 5 drops of INDICATOR #5 (Phenolphthalein).
3. Titrate with TEST SOLUTION #3 (0.1N NaOH) 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 mls of water to dilute the cloudiness.
4. The number of ml of TEST SOLUTION #3 required is the Total Acid in points of the **ULTRAGUARD ATP31** bath. The relationship between Total Acid and concentration is as follows:

7.5 ml = 3.0% ULTRAGUARD ATP31  
10.0 ml = 4.0% ULTRAGUARD ATP31  
12.5 ml = 5.0% ULTRAGUARD ATP31

The recommended range for Total Acid is 10.0-12.5 points.

The TA level is best controlled by the continuous addition of **ULTRAGUARD ATP31** concentrate by using a metering pump rather than by infrequent additions of large amounts of chemical.

### pH CONTROL:

After the bath has been adjusted to yield a TA of 10.0-12.5 points, pH control measurements can be made by the following methods.

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## USE & CONTROL INSTRUCTIONS: (continued)

### pH Control by Titration (Acid Consumed)

1. Pipette a 10 ml sample of **ULTRAGUARD ATP31** solution into a clean, 150 ml beaker, add 4 drops of INDICATOR #2 (Brom Cresol Green) then titrate with TEST SOLUTION #4 (0.1N H<sub>2</sub>SO<sub>4</sub>). A color change from blue to yellow-green indicates the end point. The number of ml of TEST SOLUTION #4 required is known as the pH Control in points for the **ULTRAGUARD ATP31** baths. The recommended operating range for the pH Control is 0.1-0.9 points of acid consumed.
2. The optimum operating range for your facility will depend on many factors (spray time, temperature, type of steel parts, etc.) and will be determined by your PPG representative.
3. In order to maintain the pH control in the range of 0.1-0.9 points; use more **ULTRAGUARD ATP31** solution to lower or CHEMFIL BUFFER to increase the pH control as needed.
4. To lower pH control by 0.1 points, add 200 ml of **ULTRAGUARD ATP31** for each 100 gallons of solution.
5. To raise pH control by 0.1 points, add 35 ml of CHEMFIL BUFFER for each 100 gallons of solution.

### pH Control - By meter or slide comparator

1. The pH of the operating solution should be checked with either an electronic pH meter or a slide comparator.
2. Maintain the pH in the range of 4.0 – 5.0 for optimum quality.
3. pH adjustments can be made in the following manner:
  - 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 200 ml of **ULTRAGUARD ATP31** per 100 gallons of operating solution.

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

EMERGENCY 24 HOUR CHEMTREC NUMBER: 800.424.9300