



INDUSTRIAL COATINGS

UGATP31F/FR

ULTRAGUARD ATP31F/FR

## PRETREATMENT TECHNICAL DATA SHEET

# LOW TEMPERATURE IRON PHOSPHATE CLEANER COATER / CONVERSION COATING

### PRODUCT DESCRIPTION

**ULTRAGUARD ATP31F** is a dual action chemical process, which can simultaneously clean and pretreat steel, galvanized steel and aluminum surfaces at temperatures ranging from 80°F to 115°F prior to painting. All industrial coatings except white anodic can be used with this product. **ULTRAGUARD ATP31FR** is the preferred replenisher to the bath.

### TECHNICAL PROPERTIES

Composition:	<u>UGATP31F</u> Liquid	<u>UGATP31FR</u> Liquid
Appearance:	Clear Yellow	Clear Yellow
Recommended Concentration:	3-6% by volume	NA
Recommended Temperatures:	80°F-115°F	80°F-115°F

### PRODUCT ADVANTAGES

- Concentrated liquid material that coats multiple substrates
- Improves paint adhesion and provides excellent corrosion resistance.
- Offers simplicity of operation
- Lowers cost and improves safety when used in spray phosphating equipment at temperatures as low as 80°F.
- The combination of additives and wetters in this product allow use with mixed metals such as cold rolled steel, galvanized steel & aluminum

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### USE & CONTROL INSTRUCTIONS:

#### Operating Properties (Typical):

- Application: Spray
- Operating Concentration: 4 – 5 % by volume
- Operating pH: 3.8 - 5.3
- Operating temperature: 80 - 95<sup>0</sup>F
- Operating time: 60 – 90 seconds
- Total Acid range: 8.0 – 12.5 pts.

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

#### Charge Instructions:

Add five gallons of the make-up product **ULTRAGUARD ATP31F** 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. If needed, heat the bath to 80<sup>0</sup>F-95<sup>0</sup>F.
- 2) Slowly add five gallons of **ULTRAGUARD ATP31F** per 100 gallons of bath with adequate mixing.
- 3) Add 0.6 gallon (2300 mls.) Chemfil Buffer to adjust the pH close to 4.0.
- 4) Continue filling the tank to the operating level with fresh water. Mix or spray ten minutes before checking the Total Acid and pH.

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

#### Analysis Procedures:

CAUTION: DO NOT PIPETTE BY MOUTH!

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### Total Acid:

#### Equipment needed:

- Burette
- Beakers
- 150 mL Flask
- 10 ml. volumetric pipette
- Pipette Bulb

#### Reagents needed:

- Indicator: Phenolphthalein
- Titrant: 0.1 Normal Sodium hydroxide Acid

#### Procedure:

1. Pipette 10 mLs of cleaner bath into a clean, dry 150 mL flask.
2. Add 5 drops of Phenolphthalein indicator.
3. While swirling the flask, titrate the solution with 0.1 Normal sodium hydroxide until the solution remains light 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 total mLs. of 0.1N Sodium hydroxide used is the Total Acid of the **ULTRAGUARD ATP31F/31FR** bath. The relationship between Total Acid and concentration is as follows:

### ULTRAGUARD ATP31F/FR Replenishment Table:

TOTAL ACID (ml)	CONCENTRATION % (by volume)	Gallons of <b>ULTRAGUARD ATP31F/FR</b> needed per 100 gallons of tank volume.
12.5	6%	0
10.4	5%	0
8.3	4%	1
6.2	3%	2
4.1	2%	3
2.0	1%	4

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The Total Acid level is best controlled by the continuous addition of **ULTRAGUARD ATP31FR** concentrate by using a metering pump rather than by infrequent additions of large amounts of chemical.

### **pH Determination (preferred method for pH control):**

(For new bath containing only **ULTRAGUARD ATP31F**, see Charging Instructions)

#### **Equipment needed:**

- pH meter
- Suitable pH electrode(s)
- Plastic squirt bottle (for rinsing the electrode)

#### **Reagents needed:**

- pH 4 buffer solution
- pH 7 buffer solution

### **pH Meter Procedure:**

1. The pH of the operating solution should be checked with an electronic pH meter following the calibration and operational procedures provided by the manufacturer.
2. 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 525 ml of **ULTRAGUARD ATP31FR** per 100 gallons of operating solution.

**Note:** Maintain bath pH between 3.8 – 5.3 for optimum quality, but preferably above 4.5 for best stability of accelerator concentration.

Troubleshooting: When part throughput is high, the activator can be depleted somewhat faster than other ingredients and result in a streaky phosphate coating. Hence, occasional addition of ULTRAGUARD ADDITIVE (UGA) may be needed. Please call your PPG representative for a recommended addition rate.

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### TECHNICAL DATA SHEET DISCLAIMER—INDUSTRIAL COATINGS:

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