



INDUSTRIAL COATINGS

(PT80555-08)

ULTRAGUARD 555

A PREMIUM SPRAY IRON PHOSPHATE

PRODUCT DESCRIPTION



PRODUCT ADVANTAGES

ULTRAGUARD 555 is extremely easy to operate, requiring minimum operator time. While producing premium results with excellent paint performance, it is very economical to use.

ULTRAGUARD 555 is multi-metal capable.

ULTRAGUARD 555 is a spray iron phosphate that generates a 25 - 80 mg/ft² high performance iron phosphate coating.

ULTRAGUARD 555 is used in multi-stage systems, preceded by an alkaline cleaner, and is suitable for use in multi-metal systems. It is particularly effective when used with an appropriate final seal.

TECHNICAL PROPERTIES



Composition: Liquid
Appearance: Clear to slightly hazy yellow

Odor: Slightly acidic
Specific Gravity: 1.20
Pound per Gallon: 10.01

Flash Point: N/A
Foaming Tendency: Slight
Recommended Diluent: Water

Behavior in Hard Water: Good
Rinsability: Good
Biodegradable Surfactants: N/A

Recommended Concentration: 5% by volume
Recommended Temperatures: 120°F – 160°F
pH (concentrate): 3.0
pH (working solution): 4.2 – 4.7

ULTRAGUARD 555

USE & CONTROL INSTRUCTIONS:

Operating Properties (Typical):

- | | |
|--|--------------------------------------|
| • Application | Normally used in a spray application |
| • Operating concentration | Total acid of greater than 14 points |
| • Operating pH | 4.2 to 4.7 |
| • Acid consumed (alternative for pH control) | 0.5 to 1.0 pts |
| • Operating temperature | 120-160F |
| • Operating time | 60 to 90 seconds |

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

Charge Instructions:

Charge Details:

- 1) Fill the clean tank to approximately $\frac{3}{4}$ of the operating level with fresh water.
- 2) Start circulating pump.
- 3) Slowly add about 5 gallons (19 liters or 50 pounds) of **ULTRAGUARD 555** for every 100 gallons of bath volume.
- 4) Slowly add approximately 0.6 gallon (2.3 Liters or 7 pounds) of **CHEMFIL BUFFER** for every 100 gallons of bath volume to the tank, ensuring good circulation.
- 5) Mix well and adjust the final volume to the operating level with additional water as needed. This should produce a bath having a pH of 4.5 and a Total Acid of about 14 points. It is important that the pH be between 4.2 and 4.7 before operating. Most baths will require some additional adjustment before reaching this exact specification.
- 6) Heat bath to operating temperature.

Analysis Procedures:

CAUTION: DO NOT PIPETTE BY MOUTH!

Total Acid (and optional Acid Consumed titration):

Equipment needed:

- Burette Assembly (add a second one if Acid consumed is tested in place of pH)
- 10-ml pipette and bulb
- 250-ml flask or beaker

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USE & CONTROL INSTRUCTIONS: (continued)

Reagents needed:

- Phenolphthalein indicator
- Bromophenol blue indicator (optional-used for running acid consumed test)
- 0.1 N Sodium Hydroxide
- 0.05 N Sulfuric acid (optional-used for running acid consumed test)

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

Total Acid Procedure:

1. Pipette a 10 ml sample of the bath into a clean, dry flask or beaker.
2. Add 3-5 drops of phenolphthalein indicator and swirl to mix.
3. Using the burette, titrate with 0.1N Sodium Hydroxide until the mixture turns to a permanent pink color.
4. Record the number of ml of 0.1N Sodium Hydroxide as the Total Acid.

Adding approximately 0.35 gallons (1.4 Liters) of **ULTRAGUARD 555** will raise the Total Acid by 1 point for every 100 gallons of bath.

The TA level is best controlled by the continuous addition of **ULTRAGUARD 555** concentrate by using a metering pump rather than by infrequent additions of large amounts of chemical. After the bath has been adjusted to the proper concentration pH adjustments can be made.

Acid consumed titration for pH control (optional):

1. Pipette a 10 ml sample of the bath into a clean, dry flask or beaker.
2. Add 3 to 5 drops of Bromophenol blue indicator and swirl to mix.
3. Using the burette, titrate with 0.05N Sulfuric Acid until the mixture turns from blue to green. Do not continue further on to yellow.
4. Record the number of ml of 0.05N Sulfuric acid as the acid consumed (or negative free acid or pH control) value.

pH determination (preferred method for pH control):

Equipment needed:

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

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USE & CONTROL INSTRUCTIONS: (continued)

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 calibration and operational procedures provided by the manufacturer.
2. Maintain the pH in the range of 4.2 – 4.7 for optimum quality.
3. pH adjustments can be made in the following manner:

Use **ULTRAGUARD 555** to decrease the pH and **CHEMFIL BUFFER** to increase the pH.

- a) Approximately 2 fluid ounces (54 ml) of **ULTRAGUARD 555** per 100 gallons will decrease the pH by 0.1 pH units.
- b) Approximately 4 fluid ounces (108 ml) of **CHEMFIL BUFFER** per 100 gallons will increase the pH by approximately 0.1 pH units.

Frequent additions of **ULTRAGUARD 555** should be used as indicated previously to lower pH and to keep the concentration constant. In the event of an emergency the pH can be lowered 0.1 units by adding approximately 100 mL of pH CONTROLLER solution per 100 gallons of operating solution. (It should be noted that the pH CONTROLLER only reduces the pH. It may also keep the total acid in range but does NOT add the additional chemistry needed to produce a quality coating and should not be used for on-going bath replenishment.)

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