Emerald Paint-Prep 385 NP

The **Emerald Paint-Prep 385 NP** system is a phosphate-free cleaner coater with no regulated heavy metals. It is especially formulated for use in the treatment of steel, zinc and aluminum surfaces. It is designed to help reduce energy cost by providing a very effective cleaning and coating that can be applied successfully at temperatures ranging from 80 to 110 F, resulting in lower energy costs. **Since Emerald Paint-Prep 385 NP** is phosphate-free, sludge is reduced to the minimum while waste treatment costs and other effluent issues are greatly diminished.

The Emerald Paint-Prep 385 NP system provides a microcrystalline surface in the nanometer (10-9m) while conventional iron phosphate coatings are usually in the micrometer (10-6m) range. The “nanocrystals” formed with Emerald Paint-Prep 385 NP increases the surface area of the substrate thus enhancing paint adhesion, corrosion protection and consequently salt-spray results. Typical coating weights vary depending on the substrate, application temperatures, and method of application. Emerald Paint-Prep 385 NP generally operates from 2 to 4% by volume, which is comparable to conventional iron phosphate products.

Features & Benefits

Economical	Low use cost, extra-long bath life
Convenient	Ease of handling and replenishment
High Quality	Excellent base for paint
Performance	Excellent corrosion resistance

Physical Data

Appearance	Clear Colorless Liquid
Foaming Ability	Controlled (Low)
pH of 2% Solution	2.5-2.9
Rinsing Ability	Superior
Solubility	Excellent
Specific Gravity	1.00-1.04

Recommended Process

Emerald Paint-Prep 385 NP is recommended to be used at a concentration of 2 to 4% by volume, depending upon the metal substrate, the end application, and the desired coating weight. Upon initial make-up, the addition of a small amount of sodium hydroxide (caustic soda) or soda ash is required to balance the bath to its appropriate operating condition. The addition of a cleaner booster additive may be required for heavily soiled parts.

Bath Make Up and Operation

Fill a clean process tank ¾ full with clean water. Add 3% by volume of Emerald Paint-Prep 385 NP. Fill the tank to operating level and heat to operating temperature. Check the pH and adjust upward, if necessary, to a range of 4.2- 4.7 with small quantities of Emerald pH Adjust. Check concentration by titration (see below) ,and make any necessary additions. Please note that the pumps should be operated before making pH adjustments or final concentration additions.

Control

Emerald Paint-Prep 385 NP is controlled by titration for its total acidity and it is based on an operating pH parameter of 3.5 – 5.0:

1. Obtain a 50-mL sample.
2. Add approximately 5 drops of Phenolphthalein Indicator to the sample.
3. Add 0.1N Sodium Hydroxide (0.1N NaOH) to the sample using a burette. Record the number of ml needed to turn the test solution from clear to light pink.
4. Compare the number of ml to the table below.

ml of 0.1N NaOH	% Concentration
0.5	0.5
1.0	1.0
1.5	1.5
2.0	2.0
2.5	2.5
3.0	3.0
3.5	3.5

ml of 0.1N NaOH	% Concentration
4.0	4.0
4.5	4.5
5.0	5.0
5.5	5.5
6.0	6.0
6.5	6.5
7.0	7.0

Note: *The titration values in the above table are approximations within the operating pH parameters*

Storage

All products listed in this Technical Process bulletin should be stored in a cool dry area. Store away from incompatible substances and see issued MSDS's for each product

Caution

KEEP OUT OF REACH OF CHILDREN
Please refer to the labels and MSDS's information for all warnings, recommendations for safety equipment, and other regulatory information. Copies of the Material Safety Data Sheets are available from Hubbard Hall.

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Our People. Your Problem Solvers.

For more information on this process,
please call us at 203.756.5521 or email: techservice@hubbardhall.com

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