



Emerald Paint-Prep 390 LT

Product Code: 2204004
Revised Date: 07/16/12

Emerald Paint-Prep 390 LT (Conversion Coating)

DESCRIPTION

Emerald Paint-Prep 390 LT is a low phosphate conversion coating 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 conversion coating that can be applied successfully at temperatures ranging from 70 to 110°F. These lower temperatures will help lower increasing energy cost when compared to traditional iron phosphate products that run at temperatures ranging from 130 to 180°F.

Emerald Paint-Prep 390 LT provides a microcrystalline surface in the nanometer (10^{-9} m) range and this in a very short contact time of 15 to 30 seconds. Conventional iron phosphate coatings are usually in the micrometer (10^{-6} m) range and it requires at least a 45 to 60 seconds contact time. The “nanocrystals” formed with **Emerald Paint-Prep 390 LT** increase the surface area of the substrate thus enhancing paint adhesion, corrosion protection and consequently salt-spray results. Since **Emerald Paint-Prep 390 LT** is a low-phosphate product, sludge is reduced to the minimum while waste treatment costs and other effluent issues are greatly diminished. Typical coating weights vary depending on the substrate, application temperatures, and method of application. **Emerald Paint-Prep 390 LT** generally operates from 2 to 4% by volume, which is comparable to conventional iron phosphate products. **Emerald Paint-Prep 390 LT** should be preceded with a mild pH type cleaner or an alkaline cleaner followed by two rinse stages.

FEATURES AND BENEFITS

- Low-Phosphate
- Low Temperature
- Short Contact Time (15 – 30 seconds)
- Minimal Sludge
- Enhances Salt Spray Results



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TYPICAL PROPERTIES

Appearance	Clear Colorless Liquid
Foaming Ability	None
pH of 2% Solution	3.1 - 3.5
Rinsing Ability	Superior
Solubility	Excellent
Specific Gravity	0.99 – 1.03

USING PROCEDURE

For most operations, dilute **Emerald Paint-Prep 390 LT** to 2 to 4 % and apply at 70 – 110°F. Increasing temperature will facilitate faster conversion coatings. Consult your Hubbard-Hall representative for the optimum operating concentrations.

MATERIAL SAFETY

Emerald Paint-Prep 390 LT is safe to be used as a low-phosphate conversion coating and paint-pretreatment for most metals.

STORAGE

Emerald Paint-Prep 390 LT should be stored in a cool dry area. Store away from incompatible substances; see an issued MSDS.

DROP TITRATION PROCEDURE

(Based on an operating pH parameter of 3.5 – 5.0)

1. Obtain a 25-ml sample of product.
2. Add approximately 3 - 5 drops of Phenolphthalein Indicator to the sample.
3. Add 0.1N Sodium Hydroxide (0.1N NaOH) to the sample dropwise, counting the number of drops to turn the test solution from Clear to Pink.



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4. Compare the number of drops to the table below.

Drops of 0.1N NaOH	% Concentration
4	0.5
8	1.0
13	1.5
17	2.0
21	2.5
25	3.0
30	3.5
34	4.0
38	4.5
42	5.0
47	5.5
51	6.0
55	6.5
59	7.0

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

BURETTE TITRATION PROCEDURE

(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.



Product Bulletin

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4. Compare the number of ml to the table below.

ml of 0.1N NaOH	% Concentration
0.3	0.5
0.7	1.0
1.0	1.5
1.3	2.0
1.7	2.5
2.0	3.0
2.3	3.5
2.6	4.0
3.0	4.5
3.3	5.0
3.6	5.5
4.0	6.0
4.3	6.5
4.6	7.0

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

WARRANTY

THE QUALITY OF THIS PRODUCT IS GUARANTEED ON SHIPMENT FROM OUR PLANT. IF THE USE RECOMMENDATIONS ARE FOLLOWED, DESIRED RESULTS WILL BE OBTAINED. SINCE THE USE OF OUR PRODUCTS IS BEYOND OUR CONTROL, NO GUARANTEE EXPRESSED OR IMPLIED IS MADE AS TO THE EFFECTS OF SUCH USE, OR THE RESULTS TO BE OBTAINED.