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## TECHNICAL DATA

### E-Phos™ 600

#### Multi-Metal Cleaner and Iron Phosphatizer by Spray and Immersion

**E-Phos 600** is a concentrated liquid, multiple temperature, detergent iron phosphate built to tolerate alkaline carry-over and operate at low concentrations and temperatures from 70° to 160°F. **E-Phos 600** is effective on steel, aluminum and zinc. However, if very heavy oils or greases are present, pre-cleaning with an immersion in a hot **EPI** alkaline soak cleaner such as **E-Kleen 111** is recommended. For spray applications use **E-Kleen 149** powder or **E-Kleen 166** liquid. Pre-cleaning will extend the working life of the **E-Phos 600** solution.

**E-Phos 600** meets requirements of TT-C-490 type II, Mil-C-490A grade III, and Mil-C-46487 grade II.

#### Physical Properties

pH	4.0 – 5.0
Foaming	Low
Hard water stability	500 ppm

#### Application

Spray Washer: 0.5 – 2% with water. Operate at temperatures between 70 - 160°F for 30 – 60 seconds.

#### Immersion

2 to 4% with water. Operate at temperature of 70-160°F for 2-5 minutes. Mechanical or air agitation recommended.

**Coating Weight = 25 to 75 mg/ft<sup>2</sup>**

#### Finishing Procedure

1. **E-Kleen** if more than three stage installation.
2. Rinse in bottom fed, overflowing cold water rinse tank with immersion installation or spray rinse.
3. **E-Phos 600** solution (start here if three stages).
4. Rinse as in Step #2.
5. **E-Phos NCr Seal**
6. Force dry

## **Solution Replenishment and Maintenance**

The strength of the **E-Phos 600** working solution is easily determined with one of the following procedures:

### **Burette Method**

1. Pipette 25 ml of **E-Phos 600** working solution into a 250 ml flask. Add 25 ml of DI water to the flask.
2. Add 8 to 10 drops Phenolphthalein Indicator to the sample solution in the flask.
3. Titrate with 0.1 N Sodium Hydroxide with constant swirling until the solution turns a faint permanent pink color. Read the burette.

Concentration of **E-Phos 600** (% by volume) = number of ml of 0.1N Sodium Hydroxide x 0.4136

### **Dropping Bottle Method**

1. Transfer 10 ml of **E-Phos 600** working solution to a 250 ml beaker with a 10 ml graduated cylinder. Rinse the cylinder twice with clean water and add these rinses to the beaker.
2. Add 8 to 10 drops Phenolphthalein Indicator to the sample solution in the beaker.
3. Using the 4 oz dropping bottle containing 1.0N Sodium Hydroxide, add drops to the sample solution in the 250 ml beaker with constant swirling until the solution turns a faint permanent pink color.

Concentration of **E-Phos 600** (% by volume) = (Drops of 1.0N NaOH) x 0.32

A test kit for the above procedure is available from **EPI** and contains:

1 each	10 ml graduated cylinder
1 each	250 ml beaker
1 each	½ oz dropping bottle of Phenolphthalein Indicator
1 each	4 oz dropping bottle of 1.0N Sodium Hydroxide

### **Caution**

The **E-Phos 600** concentrate and working solutions are mildly acidic. Avoid contact with eyes, skin and clothing. Wear eye protection (glasses, goggles or face shield), protective gloves and rubber apron when mixing solutions and while working with the solutions.

Avoid contact of **E-Phos 600** concentrate and its solutions with alkaline or cyanide materials.

DO NOT mix **E-Phos 600** with any other chemicals or solutions.

DO NOT work with **E-Phos 600** or prepare working solutions without first reading and understanding the **Material Safety Data Sheet** furnished by **EPI**.

### **Packaging**

Five (5) and 55 gallon non-returnable containers

### **IMPORTANT NOTICE! For Industrial Use Only**

The following is made in lieu of all warranties, expressed or implied, including warranties of merchantability and fitness for purpose: seller's and manufacturer's only obligation shall be to replace such quantity of the product as proved to be defective. Before using, user shall determine the suitability of the product for its intended use, and user assumes all risk and liability whatsoever in connection therewith. **Neither seller nor manufacturer shall be liable either in tort or in contract for any loss or damage, direct, incidental or consequential arising out of the use or the inability to use the product.**

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