

## E-Prep® 255

### Steel Surface Conditioner/Activator

**E-Prep 255** is a surface conditioner/activator used prior to the application of **EPI's Insta-Blak**, room temperature blackening finishes for steel surfaces.

**E-Prep 255** is used as an activator to eliminate iridescent blue finishes on difficult-to-blacken hardened micro finished tool steel surfaces. It also acts as a conditioner by enhancing the depth of black when light gray finishes result with the standard **Insta-Blak** procedures.

The **E-Prep 255** liquid concentrate is normally used at 5-10% by volume in water, at temperatures of 75°F to 150°F.

#### Equipment Required

Acid-resistant polypropylene, PVC, plastic-coated or rubber-lined tanks, hooks, baskets and tumbling barrels must be used with the **E-Prep** solution. A stainless steel tank is permissible for the **E-Prep** solution. However, stainless steel cannot be used for baskets, hooks, or barrels which will be immersed in the **Insta-Blak** blackening solutions. Mild steel or stainless steel heaters may be used. Continuous filtration is recommended for sludge removal. Air agitation can be used in this solution but if this is the case, continuous filtration is very highly recommended so that sludge particles do not settle on the parts.

#### Surface Preparation

Surfaces to be conditioned and/or activated prior to blackening must first be thoroughly cleaned with a solution of **E-Kleen 148E**. The type and degree of surface soil will determine the length of time required for cleaning and the cleaning temperature. (See **E-Kleen 148E** Technical Data Sheet.) Surface rust, if present, must be removed following the cleaning cycle. Lightly rusted surfaces should be derusted with a solution of **EPI's E-Pik 215** (dry acid salts) and heavily rusted surfaces with a solution of **E-Pik 230**. (See appropriate **EPI** Technical Data Sheets.)

#### Solution Makeup

The preferred concentration for an **E-Prep 255** working solution is 10% by volume in tap water. Prior to charging a production tank, some experimentation should be done with properly prepared sample parts, using concentrations of 5 to 10% by volume and

operating temperatures of 75° to 150°F. Immersion times should be varied from one (1) to 5 minutes to determine the best parameters to obtain the ultimate depth of black.

### **Typical Finishing Procedure**

1. Thoroughly clean in warm (120-150°F) 10 to 15% by volume **E-Kleen 148E** solution, immersion times of 5 to 10 minutes (and derust, if necessary).
2. Rinse in bottom-fed, overflowing cold water rinse.
3. **E-Prep 255** typically at 120°F with immersion time of 1 to 2 minutes.
4. Rinse in bottom-fed, overflowing cold water rinse.
5. Blacken in an **Insta-Blak** solution for 2 to 5 minutes.
6. Rinse in bottom-fed, overflowing cold water rinse.
7. Seal with one of **EPI's E-Tec** water displacing corrosion inhibitors.

Please see **Insta-Blak** Technical Data Sheet for more complete processing instructions.

### **Solution Replenishment and Maintenance**

The strength of the **E-Prep 255** working solution is easily determined with the following procedure:

1. Transfer 5 ml of **E-Prep 255** working solution to a 250 ml beaker with a 10 ml graduated cylinder. Rinse the graduated cylinder with clean water and add to the 250 ml beaker.
2. Add 8 to 10 drops Phenolphthalein indicator to the sample solution in the beaker.

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. Count the drops as they are being added.

Concentration of **E-Prep 255** (% by volume) = number of drops of 1.0N Sodium Hydroxide x 0.28.

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 2 oz. dropping bottle of Phenolphthalein

1 each 4 oz. dropping bottle of 1.0N Sodium Hydroxide

### **Caution**

The **E-Prep 255** 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-Prep 255** concentrate and solution with cyanide and alkaline materials.

**Do Not Mix** **E-Prep 255** with any other chemicals or solutions.

**Do Not** work with the **E-Prep 255** or prepare working solutions without first reading and understanding the MATERIAL SAFETY DATA SHEET furnished by **EPI**.

**Packaging** 5 gallon 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 the implied 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 products.**

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