

## **E-Prep® 258**

### **Universal Steel Surface Conditioner/Activator**

**E-Prep 258** is a surface conditioner/activator used prior to the application of **EPI's Insta-Blak 333**, room temperature blackening process and **Insta-Rust 340** rust patina process for steel, cast iron and leaded steel surfaces.

#### **Insta-Blak 333 Applications**

**E-Prep 258** 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. It eliminates smut from smutty steel such as bar stock. It also removes rust on steel parts.

#### **Insta-Rust 340 Applications**

**E-Prep 258** is the base for the rust patina.

The **E-Prep 258** liquid concentrate is normally used at 20% by volume in water for **Insta-Blak** and at 25% by volume for **Insta-Rust 340**. Solution should be at ambient temperature of 65°F to 85°F.

#### **Equipment Required**

Acid-resistant polypropylene, polyethylene PVC, plastic-coated or rubber-lined tanks, hooks, baskets and tumbling barrels must be used with the **E-Prep 258** solution. Stainless steel cannot be used for tanks, baskets, hooks, or barrels which will be immersed in the **E-Prep** and **Insta-Blak** solutions. A filtration system is required to remove sludge from the solution.

## Surface Preparation

Surfaces to be conditioned and/or activated prior to blackening must first be thoroughly cleaned with a solution of **E-Kleen 148-E**. The type and degree of surface soil will determine the length of time required for cleaning and the cleaning temperature. (See **E-Kleen 148-E** Technical Data Sheet.) Rusted surfaces can be derusted in the **E-Prep 258** and prepared for **Insta-Blak** at the same time.

## Solution Makeup

	<b>Insta-Blak 333</b>	<b>Insta-Rust 340</b>
<b>% By Volume</b>	20%	25%
<b>Temperature</b>	65° - 85° F	65° - 85° F
<b>Immersion Time</b>	30 – 60 seconds*	2 – 5 minutes**

\* When blackening with **E-Prep 258**, if a green-black color results try using **E-Prep 258** at 10% by volume.

\*\* The rust color is affected by the immersion time in **E-Prep 258**.

## Typical Finishing Procedure for Blackening Steel

1. Thoroughly clean in 120-150°F 10 to 15% by volume **E-Kleen 148-E** solution with immersion time of 5 to 10 minutes.
2. Rinse in bottom-fed, overflowing cold water rinse.
3. **E-Prep 258**, 20% by volume, 65 to 85°F with immersion time of 30 seconds to 5 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.

## Typical Finishing Procedure for Rust Patina

1. Steel/Iron parts are thoroughly cleaned and degreased for 5-10 minutes in **E-Kleen 148-E** (130°-150°F) or **E-Kleen 102-E** (140°-180°F).
2. Bottom-fed, overflowing cold water rinse for 30 to 60 seconds.
3. **E-Prep 258**, 25% by volume, 2-5 minutes at 65°-85°F. The resulting rust color will be

determined by the immersion time in the **E-Prep 258**. We recommend trying your parts at 1, 2, 3, 4 and 5 minutes.

4. Bottom-fed, overflowing cold water rinse for 30 to 60 seconds.

5. **Insta-Rust 340**, 10% by volume at 65°-85°F for 60 seconds.

6. Bottom-fed, overflowing cold water rinse for 30 to 60 seconds.

7. Seal with **E-Tec 520** acrylic resin, **E-Tec 521**, **E-Tec 522** acrylic wax or **RENWAX**. Please see the **E-Kleen**, **Insta-Blak** and **E-Tec** Technical Data Sheets for more complete processing instructions.

### **Solution Replenishment and Maintenance**

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

- 1 each 10 ml graduated cylinder
- 1 each 250 ml beaker
- 1 each 1/2 oz dropping bottle of Phenolphthalein
- 1 each 4 oz dropping bottle of 1.0N Sodium Hydroxide (NaOH)

The approximate strength of the **E-Prep 258** working solution is easily determined with the following procedure:

1. Transfer 5 ml of **E-Prep 258** working solution to a 250 ml beaker with a 10 ml graduated cylinder. Rinse the graduated cylinder with 10 ml of 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 NaOH, 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 258** (% by volume) = number of drops of 1.0N NaOH x 0.4

### **Burette Method**

The strength of the solution may be determined by the following titration procedure:

1. Pipette 10 ml of the sample into a clean 125 ml Erlenmeyer flask. Add 10 ml of DI water.
2. Add 8 to 10 drops of Phenolphthalein Indicator.
3. Titrate with 1.0N Sodium Hydroxide to a definite pink color.
4. Concentration of **E-Prep 258** (% by volume) = ml of 1.0N NaOH x 5.56.

## **Caution**

The **E-Prep 258** 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 258** concentrate and solution with cyanide and alkaline materials.

**Do Not Mix** **E-Prep 258** with any other chemicals or solutions.

**Do Not** work with the **E-Prep 258** or prepare working solutions without first reading and understanding the **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 product.**

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