

## Insta-Rust 340

### Non-Acid Rust Patina/Rusting Process for Steel

#### DESCRIPTION

**Insta-Rust 340** is an immersion, alkaline based liquid concentrate that produces a wide variety of rust colors from greenish-brown to orange-brown. **E-Prep 258** is the prep that is required to develop the rust color. This process is used for architectural and other artistic finishes. The process is safer to use than mineral acids because there are no fumes.

#### EQUIPMENT REQUIRED

Plastic tanks, tumbling barrels, racks, hooks and/or baskets must be used with the **Insta-Rust 340** solution. Polypropylene, polyethylene or PVC dipping baskets, polypropylene rotating barrels, plastic or rubber lined steel tanks and plastisol coated racks and hooks are suitable for use with **Insta-Rust 340** solution.

#### PROCESSING STEPS

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**.

#### NOTE

The surface finish of the steel and the alloy of the steel can affect the overall color. We recommend trying 4-6 scrap pieces before going ahead with the process.

#### FILTERING

A 50-micron filter will lengthen the bath life. Talk to your EPI representative or your local filtration representative.

The strength of the **Insta-Rust 340** solution is gradually depleted with use, but may be replenished with periodic additions of **Insta-Rust 340** concentrate. The frequency of additions will depend upon the volume of work processed. For optimum results the solution should be maintained at 80% of its original strength or greater and frequent small additions are recommended.

**Insta-Rust 340** contains zinc metal and sodium hydroxide.

The strength of solution and the amount of concentrate to be added is determined by the following titration procedure:

1. Pipette a 2 ml sample of the **Insta-Rust 340** working solution into a 250 ml Erlenmeyer flask.
2. Add 100 ml of distilled water.
3. Add 10 ml Ammonium Hydroxide (conc.) and 1/4 tsp Ammonium Chloride.
4. Add a small amount of Eriochrome Black T (approx. 1/4 gram). At this point the solution will be a red violet.
5. Add 5 ml of 37% Formaldehyde.
6. **TITRATE IMMEDIATELY** with 0.1M EDTA to a blue endpoint

**Calculation:** ml of 0.1M EDTA x 3.85 = % by volume concentration of **Insta-Rust 340**

## **REAGENTS**

**0.1M EDTA** - Weigh out exactly 37.2398 grams of Ethylenediaminetetraacetic Acid Disodium Salt and dissolve in distilled or deionized water. Dilute to total volume of one liter in volumetric flask.

**Eriochrome Black T Indicator** - Weigh out 1 gram Eriochrome Black T powder and weigh out 100 grams Sodium Chloride powder separately. Then mix the two powders very thoroughly.

## **CAUTION**

The **Insta-Rust 340** solution is highly alkaline. Avoid contact with skin, eyes and clothing. A full face shield, rubber gloves and rubber apron must be worn when mixing the solution or while working with the solution.

In case of contact immediately flush skin or eyes with running water for at least 15 minutes. For eyes, obtain medical attention.

Before using **Insta-Rust 340** or any other **EPI** products in the process, the **Material Safety Data Sheet** for each product must be read and the specific instructions and precautions followed to assure correct use and personal safety.

Avoid contact of the **Insta-Rust 340** concentrate and working solution with acidic materials.

Do not mix **Insta-Rust 340** with any other chemicals or solutions.

## **PACKAGING**

One (1) 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 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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