

E-Prep® 221

Stabilized Peroxide Bright Dip Process For Copper and Brass

E-Prep 221 accelerates and stabilizes the brightening reaction, minimizes the breakdown of the peroxide and prevents retarnishing of brass and copper after brightening. **E-Prep 221** does not contain Nitric or Chromic acids or chromates and is environmentally safe. It does not contain chelaters or complexers, simplifying waste treatment. **E-Prep 221** is supplied as a liquid concentrate.

Brass and copper parts should be thoroughly cleaned prior to the **E-Prep 221** descaling and bright dipping process. **E-Kleen 105** is an ideal cleaner for this purpose.

EQUIPMENT

Polypropylene tanks, reinforced from outside, are best suited for use with **E-Prep 221**. Stainless Steel tanks utilizing Inconel Alloy 22, Inconel 600, Inconel 617 or Incoloy 800 grades. Quartz or Teflon coated heaters are recommended for the bright dip tank. Stainless steel coils are used for internal cooling.

Good exhaust ventilation with positive air flow over the tank is highly recommended for large tanks of **E-Prep 221**. Smaller solution volumes should be operated in well ventilated areas.

OPERATION

1. **Pre-conditioning and scale removal**

75% by volume water

15% by volume concentrated Sulfuric Acid, 66° Be

10% by volume **E-Prep 221**

Temperature: 70-80°F

Time: 1-2 minutes

2. **Cold water rinse**

3. **Bright Dip – 100 gallon Bath Make Up**

Water, deionized or soft 75 gal (70 gal if using 26% hydrogen peroxide)

E-Prep 221 10 gal

35% wt. Hydrogen Peroxide 15 gal (20 gal if using 26% hydrogen peroxide)

Temperature: 110 - 120°F for a bright finish

Time: 1-2 minutes or longer for a bright finish depending upon the original surface.

4. **Cold water rinse**
5. **Desmut**
Parts are given another quick dip into a 3 to 5% volume Sulfuric Acid solution to remove the brown smut formed during the brightening process.
6. **Cold water rinse**
7. **Hot water rinse**
8. **Forced air or spin dry**

NOTE: **E-Prep 221** bright dip reaction is exothermic. If the temperature of the solution exceeds 130°F, cooling water should be circulated through an internal cooling coil made of 304 or 316 stainless steel.

Depletion of the **E-Prep 221** from the bright dip solution is indicated by slowness of the fizzing reaction and lack of the brown film formation during brightening. Add 5% **E-Prep 221** and 5% Hydrogen Peroxide to rejuvenate the bath. The bath could be replenished a few times but should be dumped when exhausted due to heavy build up of dissolved metals.

To get maximum bath life, turn off the heat and cool bath to 80°F or below - whenever the bath is not used for prolonged periods of time.

CAUTION

The **E-Prep 221** solution is mildly acidic. Avoid contact with eyes, skin and clothing. Wear eye protection (glasses, goggles or face shield), protective rubber gloves and aprons, when preparing solutions and while working with the solutions. Do not mix the **E-Prep 221** concentrates or solutions with alkaline materials, cyanide, or any other substances. The **E-Prep 221** solution is toxic if taken internally.

Do not work with the **E-Prep 221** solution or other materials without first reading and understanding the **MATERIAL SAFETY DATA SHEET** furnished by **EPI**.

STORAGE

Store **E-Prep 221** and the Hydrogen Peroxide in a cool area and away from direct sunlight. Always use new and fresh Hydrogen Peroxide because peroxide loses strength - even within a few months.

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 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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