

E-Prep® 249

Chemical Polishing and Surface Activator for Zinc Die Cast and NdFeB permanent magnets

E-Prep 249 is a chemical polish and surface activator for zinc die cast used prior to the application of **EPI's E-Chrome Ultra Yellow, E-Passivate Yellow Red** and other **EPI's** trivalent processes. **E-Prep 249** also works as a zinc die cast conditioner prior to copper plating in **E-Brite Ultra Cu**.

After the appropriate cleaning cycle, **E-Prep 249** may be used to activate lead bullets prior to copper plating with the **E-Brite Ultra Cu-Pb** non cyanide copper plating process.

The **E-Prep 249** liquid concentrate is normally used at 25-40% by volume in water at ambient temperatures of 65°F to 85°F.

The **E-Prep 249** is also essential for chemical whitening and surface activation of NdFeB, followed by plating Ni-Cu-Ni layers, or Zinc-Trivalent Chromium Passivation layers, or Cu-EN (high-Phos) layers over NdFeB permanent magnets for its corrosion protection.

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 249** solution. Stainless steel cannot be used for tanks, baskets, hooks, or barrels which will be immersed in the **E-Prep**. A filtration system is required to remove sludge from the solution.

Surface Preparation for Die Cast

1. **E-Kleen 163** 8-12% by volume, 130°-160°-F, 7-10 minutes or **E-Kleen 173** 6-8 oz/ gallon, 130°-150°-F, 2-10 minutes.
2. Cold water rinse.
3. **E-Prep 249**, 10-20% by volume, 65°-85°-F, 1-10 minutes (depending on the zinc die casting)
4. Cold water rinse.
5. Use one of these **EPI** trivalent processes: **E-Chrome Ultra Yellow, E-Passivate Yellow Red** or **E-Chrome Ultra Yellow 600**. See respective Technical Data Sheets.

Surface Preparation for NdFeB

1. **E-Kleen 163** 8-12% by volume, 130°-160°-F, 7-10 minutes or E-Kleen 173 6-8 oz/ gallon, 130°-150°-F, 2-10 minutes.
2. Cold water rinse.
3. 5% nitric acid to descale or de-rusting of NdFeB: 1-10 minutes at room temperature
4. Rinse
5. 0.5% nitric acid for whitening NdFeB: 1-10 minutes at room temperature
6. rinse
7. **E-Prep 249 for whitening and activation of NdFeB:** 10% by volume, 65°-85°-F, 1-10 minutes (depending on NdFeB)
8. Cold water rinse.
9. Use one or several of these **EPI electroplating, high-Phos electroless nickel, trivalent passivation** processes. See respective Technical Data Sheets.

Solution Control & Replenishment

Titration Method

1. Take a sample of the **E-Prep 249** solution from the bath with a beaker.
2. Measure out 5 ml of the sample with a 5 ml pipette and transfer to a clean 125 ml Erlenmeyer flask. Add 50 ml of water.
3. Add 8 to 10 drops of Phenolphthalein Indicator.
4. Titrate with 1.0N Sodium Hydroxide to a definite pink color.
5. Concentration of **E-Prep 249 (%)** = ml of 1.0N Sodium Hydroxide x 2.08.

Add **E-Prep 249** concentrate based on the titration result. The **E-Prep 249** will build up with zinc metal and will have to be discarded after it loses its effectiveness.

Caution

The **E-Prep 249** 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 249** concentrate and solution with cyanide and alkaline materials.

Do Not Mix E-Prep 249 with any other chemicals or solutions.

Do not work with the **E-Prep 249** 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: sellers and manufacturers 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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