

E-Prep 270B or E-Prep 270M Bath Analysis and Control

Bath Analysis

Use a cooled down bath sample for all the analyses.

Free Acidity

1. Pipet 10 ml sample of the bath and dilute it to 250 ml in a volumetric flask with DI water.
2. Then pipet 25 ml of this diluted solution into a 250 ml Erlenmeyer flask. Add 4 to 6 drops of Bromophenol Blue Indicator.
3. Titrate against 0.1N NaOH from a yellow to a blue or green end point.

Titration ml of 0.1N NaOH = Free Acid Points

Ferric Iron Content

Note: A brand new solution of **E-Prep 270M** or **270B** does not contain any dissolved iron and does not have to be analyzed at start. As you start to bright dip stainless steel parts, iron, nickel and chromium go into solution. The dissolved iron is chemically oxidized by **E-Prep 270** to form ferric iron. The ferric iron concentration in the **E-Prep 270** bath is critical for consistent performance.

Test Procedure

1. Pipet 5 ml sample of the **E-Prep 270** bath into a 250 ml Erlenmeyer flask.
2. Add about 100 ml of 10% sulfuric acid and 1 teaspoon full of Potassium Iodide crystals. Shake well and store it away from light (in a dark place if possible) for 5 minutes.
3. Then add 100 ml of DI water and immediately titrate against 0.1N Sodium Thiosulfate from a burette. When the solution changes from dark brown to light green add 2 to 3 ml of 10% Thiodene Indicator. A blue/black color will start to form. Continue on with the titration until this color disappears.

Ferric Iron g/l = Titration ml x 1.12

E-Prep 270B or E-Prep 270M Bath Parameters and Control

1. Check ferric iron. Maintain it below 16 g/l. When it exceeds 16 g/l, decant a portion of the bath or discard the bath and make up a new one.
2. Check and maintain free acid points between 40 and 65. If below 40, add **E-Prep 270 Additive**. Every 1% by volume addition of **E-Prep 270 Additive** will raise free acid point by 0.5. If over 65, then decant and add water to dilute the bath.
3. Finally, when the **E-Prep 270** bath reactivity slows down, meaning no gassing from work, even while maintaining the above parameters, then add **E-Prep 270 Booster**, only 1% by volume at a time, let it mix and recheck activity. Normally, 1 to 2% by volume of **E-Prep 270 Booster** will restore the bath activity.

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