



This specification covers the procedure to be used for precipitating carbonates from cyanide plating or strike baths. Either of the following two methods may be used. The Barium Hydroxide Method, compared with the Calcium Hydroxide Method, has the disadvantages of being costly, requires maintenance of the bath at a high temperature during the precipitation, and due to the high molecular weight of barium hydroxide, a relatively large amount is required for the precipitation of a small amount of carbonate.

BARIUM HYDROXIDE METHOD

The following procedure shall be used when the carbonate content is more than 4 oz./gal.

1. Concentrate the plating or strike solution to approximately 2/3 its normal volume.
2. Transfer the solution to a clean tank with heating coils and exhaust. This tank should be of the same capacity as plating tank.
3. Maintain the untreated solution at $71^{\circ} \pm 3^{\circ}\text{C}.$ ($160^{\circ} \pm 5^{\circ}\text{F}.$).
4. Make a slurry of barium hydroxide, $\text{Ba}(\text{OH})_2 \cdot 8\text{H}_2\text{O}$, in distilled water at 80° - $90^{\circ}\text{C}.$ (176° - $194^{\circ}\text{F}.$) - should be about a 90% mixture.
5. Add the slurry with stirring so that there is excellent mixing of the slurry and plating or strike solution.
6. Five oz. of barium hydroxide will remove 2 oz. of carbonate from the plating or strike solution.
7. Maintain the treated solution at a temperature of $71^{\circ}\text{C}.$ ($160^{\circ}\text{F}.$) for at least 1 hour.
8. Cool to room temperature.
9. Thoroughly clean the plating tank and hood exhaust, as well as the anodes, anode and cathode bars, etc.
10. Return the solution to the plating tank; filter it in such a manner that the upper layers of the solution are removed first, leaving the precipitate undisturbed as long as possible.
11. After the solution has been returned by filtration to its own tank, add distilled water, if necessary, to bring to volume.
12. Mix the solution thoroughly and send a representative sample to the laboratory for analysis.
13. Balance the solution.

CALCIUM HYDROXIDE METHOD

1. Analyze solution and determine how much carbonate is to be removed and the amount of caustic build-up which will result from the hydrated lime treatment.
2. Heat the plating solution to 79° - $85^{\circ}\text{C}.$ (175° - $185^{\circ}\text{F}.$) and transfer all or a portion to a spare tank.
3. Prepare a slurry of the required amount of hydrated lime by adding the special lime to water with vigorous stirring.
4. Slowly add the lime slurry to the plating or strike solution while stirring and agitate for 2-4 hours to insure complete reaction.
5. Allow the precipitated calcium carbonate to settle and return the solution to the plating tank by filtration or decantation.

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