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ZINC ELECTROPLATING SOLUTION

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5 Claims. (Cl. 204—18)

This invention relates to a zinc electroplating solution.

Considerable difficulty has been experienced in some cases in preventing staining of the parts when plating articles with zinc in a cyanide solution.

In plating articles, usually iron, with zinc in a cyanide solution, substantially pure zinc is used in the anodes which dissolve as the process progresses and is plated on the article which is made the cathode in the solution. A standard solution consists of substantially 3 to 6 ounces of zinc cyanide, 3 to 6 ounces of sodium cyanide, and from 2 to 4 ounces of sodium hydroxide per gallon of water. When articles are electroplated in such a solution, there is considerable difficulty in obtaining a uniformly colored finish due to the fact that the articles become stained or discolored.

An object of the present invention is to provide an effective electroplating solution for making uniformly colored zinc plated articles.

In accordance with an embodiment of the invention, the staining or discoloration of zinc plated parts is overcome by adding from .05 to .10 ounce of a suitable organic colloid such as gum arabic, .25 to .50 ounce of a suitable fluoride such as sodium fluoride, and about .05 gram of lead per gallon to the solution. The lead may be either added as such or a lead salt such as lead carbonate or lead acetate containing an equivalent amount of lead, may be used. It is generally recognized that the presence of lead in a cyanide solution, should be avoided; however, the addition of lead in combination with the addition of gum arabic and sodium fluoride has a beneficial effect and effectively prevents the staining or discoloration of the zinc plated article.

While a specific embodiment of the invention has been described, it will be understood that any changes and modifications may be made therein without departing from the spirit and scope of the invention.

What is claimed is:

1. A standard electrolytic zinc plating solution comprising an aqueous solution of zinc cyanide, sodium cyanide, sodium hydroxide, and small quantities of gum arabic, sodium fluoride and a quantity of lead salt sufficient to provide approximately .05 gram of lead per gallon of solution.

2. A standard electrolytic zinc plating solution comprising an aqueous solution of substantially 3 to 6 ounces of zinc cyanide, 3 to 6 ounces of sodium cyanide, 2 to 4 ounces of sodium hydroxide, small quantities of gum arabic, small quantities of sodium fluoride, and approximately .05 gram of lead per gallon of solution.

3. A standard electrolytic zinc plating solution comprising an aqueous solution of substantially 3 to 6 ounces of zinc cyanide, 3 to 6 ounces of sodium cyanide, 2 to 4 ounces of sodium hydroxide, .05 to .10 ounce of gum arabic, .25 to .50 ounce of sodium fluoride, and .05 gram of lead per gallon of solution.

4. A standard cyanide zinc plating solution to which have been added small amounts of gum arabic and sodium fluoride and sufficient lead acetate to provide approximately .05 gram of lead per gallon of solution.

5. A standard cyanide zinc plating solution to which have been added substantially .05 to .10 ounce of gum arabic, .25 to .50 ounce of sodium fluoride, and sufficient lead carbonate to provide .05 gram of lead per gallon of solution.

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