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Development of Eco-Chrome Plating Solution and Characterization of the Deposits

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1. Introduction

It is important to find stable trivalent chrome solution and develop plating condition to have thick chrome layer for and environmental and industrial applications. In this study, trivalent chrome plating was systematically studied with plating to find an optimum plating conditions, expecially, to find long-life and stable electrolytic solution.

2. Experimental Method

The trivalent chrome plating was carried out in chrome sulphate and chloride bath with composition, voltage and current density, respectively. The chrome layers were evaluated by scanning electron microscopy and atomic force microscopy.

3. Results

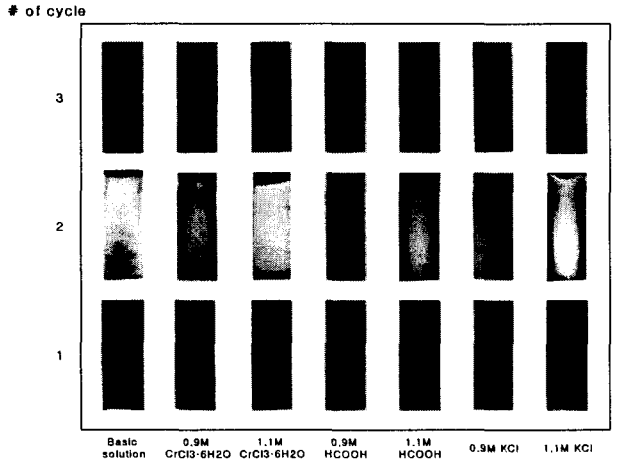

Fig. 1 Effect of composition and number of usage of solution

4. Summary

Trivalent chrome with more than 100 μm thickness was well formed in this test conditions. The trivalent chrome thickness increases with increasing $CrCl_3$ and decreasing HCOOH, without change KCl. Chrome sulphate bath was more stable than chloride bath in this test conditions.

5. Acknowledgement

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