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EFFECT OF THE COMPOSITION OF Ni(II) AND Co(II) COMPLEXES ON ELECTRODEPOSITION OF THE METALS FROM CITRATE BATHS.

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Abstract

The addition of amino compounds to citrate nickel plating baths facilitates plating by raising the nickel current efficiency due to a postulated formation of Ni(II) heteroligand complexes. This paper reports the electrodeposition of nickel and cobalt with the composition and nature of complexes in citrate and citrate-glycinate baths. The systems Ni(II)-H//3Cit; Ni(II)-H//3Cit-HGly and CO(II)-H//3Cit; and CO(II)-H//3Cit-HGly were studied as to complex formation and electrodeposition over a range of pH at an approximately 1:1 ratio of the original complexant concentrations to those of the coordinated entities. The plating rate was found to be a function of the composition of the complex in solution.
