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Electrochemical behavior of benzenepolycarboxylic acids on solid electrodes in aqueous and mixed solutions

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Abstract

Electrochemical behavior of biologically active benzenepolycarboxylic (trimellitic, trimesic, pyromellitic, mellitic) acids is studied by a voltammetry method on Pt, Cu, Ta, and Cu-Hg in aqueous media and water mixtures with ethanol and pyridine. In all cases, voltammograms for the acids display waves corresponding to the discharge of hydrogen ions. In the case of Cu-Hg, voltammograms for trimellitic, trimesic, and pyromellitic acids additionally exhibit poorly pronounced prewaves. Concentrations of ionized and non-ionized forms in dilute solutions of the acids are calculated. Apparent dissociation constants K_a^{II} and K_a^{III} for mellitic acid are calculated from the voltammetry data.

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