

Kinetics and Mechanistic Studies of the Dissociation of Anthranilic-diacetato-2,2'-dipyridyl Chromium (III) Dihydrated in Acidic Media

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Acid catalysed dissociation of anthranilic-diacetato-2,2'-dipyridyl chromium (III) dihydrated [Cr(atda)(dipyridyl)] hydrate has been studied kinetically in aqueous perchloric media over a temperature range 50-70 °C, under these experimental conditions, the reaction occurs by acid assisted path only. According to the rate law: Rate = k_H^+ [Complex][H⁺], where k_H^+ is the rate constant for acid assisted path. Analysis of the rate data corresponding to k_H^+ path suggests that the reaction is first order in [HClO₄] for the title complex and the chelate ring in 2,2'-dipyridyl complex suffers one ended dissociation accompanied by protonation of the released end of the basic ligand which leads to a faster rupture of the remaining metal ligand bond leading to the complex loss of the ligand.