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碱性介质中分光光度法研究二羟基二(过碘酸)合银(III)配离子氧化一些二元醇的反应动力学及机理
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收稿日期 2005-4-27 修回日期 2005-12-21 网络版发布日期 接受日期

摘要 在碱性介质中用分光光度法研究了在298.2~318.2K之间二羟基二(过碘酸)合银(III)配离子氧化乙二醇和1,3-丁二醇的反应动力学及机理。反应速率表明:反应对氧化剂和还原剂均为一级,表观速率常数随OH⁻浓度增加而增加。提出了包括配离子和还原剂形成配离子的前期平衡的反应机理,可以很好的用来解释全部实验现象,求出了速控步的速率常数和活化参数。

关键词 [二羟基二\(过碘酸\)合银\(III\)配离子,乙二醇,1,3-丁二醇,动力学及机理,速率常数](#)

分类号

Kinetics and Mechanism of Oxidation of Some Diols by Dihydroxydiperiodatoargentate(III) in Alkaline Medium

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Abstract The kinetics of oxidation of ethylene glycol and 1,3-butylene glycol by dihydroxydiperiodatoargentate(III) in alkaline medium have been studied by spectrophotometry in the range of 298.2—318.2 K. It is shown that the reaction was first order with respect to each reductant and Ag(III), and k_{obs} increased with an increase of [OH⁻]. A plausible mechanism of reaction involving a pre-equilibrium of adduct formation between complex and reductants was proposed, which could be applied to explain all experimental phenomena, and the activation parameters of the rate-determining step have been also calculated.

Key words [dihydroxydiperiodatoargentate\(III\)](#) [ethylene glycol](#) [1,3-butylene glycol](#) [kinetics and mechanism](#) [rate constant](#)

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