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FULL PAPERS

用分光光度法测量碳酰肼及孔雀石绿与碳酰肼的缩合反应动力学

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摘要 用分光光度法研究了(15.0～22.0) ℃温度区间，水溶液中孔雀石绿和碳酰肼的缩合反应动力学。结果表明：此反应为二级反应，对于反应物分别为一级反应，离子强度在(0.2～1.0) mol·L^{-1}内对该反应产生负盐效应。提出了孔雀石绿和碳酰肼的反应机理。据此机理导出的速率方程与实验结果相吻合。在此基础上提出了测量碳酰肼浓度范围在(0.02～0.5)×10^{-3} mol·L^{-1}的分光光度法。

关键词 碳酰肼,孔雀石绿,动力学及机理,分光光度法

分类号

Molecular Recognition of Chiral Zinc Porphyrin with Amino Acid Esters

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Abstract The kinetics of the condensation reaction of malachite green and carbohydrazide was studied by spectrophotometry in aqueous solution in the temperature range of 15.0—22.0 ℃. The reaction was found to be second-order overall, first-order with respect to each reactant. The effect of ionic strength on the reaction has negative salt effect in the range of 0.2—1.0 mol•L^{-1}. A mechanism of the reaction between malachite green and carbohydrazide was proposed, and the rate equation derived from the mechanism can explain all experimental observations properly. Based on this reaction, a method of determining the content of carbohydrazide in the concentration range of (0.02—0.5)×10^{-3} mol•L^{-1} was proposed.

Key words carbohydrazide malachite green kinetics and mechanism spectrophotometry

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