

研究论文

微晶酚酞富集-分光光度法测定痕量Zn(II)

李全民*, 吴宏伟, 刘国光

(河南师范大学化学与环境科学学院 河南省环境污染控制重点实验室 新乡 453007)

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摘要 建立了一种利用修饰有结晶紫(CV⁺)的微晶酚酞作为固态吸附剂分离富集溶液中痕量Zn(II)的新方法, 富集后的Zn(II)含量可直接用光度法测定. 控制一定条件, Zn(II)能与常见阳离子Ni(II), Cd(II), Al(III), Ca(II), Mg(II), Co(II), Mn(II), Cu(II), Pb(II), Fe(III)等完全分离, 且富集时基本不受, Br⁻, Cl⁻, I⁻, 等阴离子影响.

微晶酚酞对Zn(II)的吸附容量为25.8 mg/g; 富集因数可达200倍, 回收率在97.7%~102%之间, RSD小于2.7%.

该方法已成功应用于实际水样中Zn(II)的富集测定, 结果令人满意.

关键词 [Zn\(II\)](#) [微晶酚酞](#) [结晶紫](#) [分离富集](#)

分类号

Determination of Trace Zinc by Spectrophotometry after Preconcentration on Microcrystalline Phenolphthalein

LI Quan-Min*, WU Hong-Wei, LIU Guo-Guang

(Henan Key Laboratory for Environmental Pollution Control, College of Chemistry and Environmental Science, Henan Normal University, Xinxiang 453007)

Abstract A new method for trace Zn(II) preconcentration and separation was described using microcrystalline phenolphthalein modified by crystal violet as an adsorbent coupled with the determination by spectrophotometry. Under certain conditions Zn(II) was completely separatable from Ni(II), Cd(II), Al(III), Ca(II), Mg(II), Co(II), Mn(II), Pb(II), Cu(II), Fe(III) and hardly affected by, Br⁻, Cl⁻, I⁻. The adsorption capacity of microcrystalline phenolphthalein was found to be 25.8 mg/g for Zn(II). The preconcentration factor can reach 200, and the recovery of Zn(II) is in a range of 97.7%~102%. The relative standard deviation (RSD) is not beyond 2.7%. The proposed method has been applied to the preconcentration and determination of trace Zn(II) in water samples with satisfactory results.

Key words [Zn\(II\)](#) [microcrystalline phenolphthalein](#) [crystal violet](#) [separation and concentration](#)

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通讯作者 李全民 mercury6068@hotmail.com

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