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Determination of Copper by Flame Atomic Absorption Spectrometry after Preconcentration with Activated Carbon Impregnated with a New Schiff Base

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摘要 A simple and reliable method for the

extraction and determination of trace amounts of copper(II) ions using activated

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aldimine (HPPS) and atomic absorption spectrometry is presented. Recovery

efficiency and the influence of pH value, volume of sample solution, effect of

different eluents, and interfering ions were evaluated. The limit of detection

(3σ) was $2.62 \text{ ng}\cdot\text{mL}^{-1}$ and the

relative standard deviation ($n=10$) was 1.5%. Under optimum

conditions, the copper ions were concentrated 25 fold using 250 mL of sample

solution and 10 mL of eluent. This procedure has been successfully applied to

the determination of copper in different water samples.

关键词 [preconcentration](#), [determination](#), [copper](#), [flame atomic absorption spectrometry](#), [activated carbon](#)

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Abstract A simple and reliable method for the extraction and determination of trace amounts of copper(II) ions using activated carbon (AC) impregnated by a new Schiff base 5-[(4-heptyloxyphenyl)azo]-N-(4-propyloxyphenyl)-salicylaldimine (HPPS) and atomic absorption spectrometry is presented. Recovery efficiency and the influence of pH value, volume of sample solution, effect of different eluents, and interfering ions were evaluated. The limit of detection (3σ) was $2.62 \text{ ng}\cdot\text{mL}^{-1}$ and the relative standard deviation ($n=10$) was 1.5%. Under optimum conditions, the copper ions were concentrated 25 fold using 250 mL of sample solution and 10 mL of eluent. This procedure has been successfully applied to the determination of copper in different water samples.

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