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Keyword: | [TOP](#) > [Available Issues](#) > [Table of Contents](#) > Abstract

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[\[PDF \(838K\)\]](#) [\[References\]](#)**Highly Sensitive Determination of Cadmium and Lead in Leached Solutions from Ceramic Ware by Graphite Furnace Atomic Absorption Spectrometry Coupled with Sequential Injection-based Solid Phase Extraction Method**[Minoru UEDA^{1\)}](#), [Norio TESHIMA^{1\)}](#), [Tadao SAKAI^{1\)}](#), [Yasutaka JOICHI^{2\)}](#) and [Shoji MOTOMIZU^{2\)}](#)*1) Department of Applied Chemistry, Aichi Institute of Technology**2) Graduate School of Natural Science and Technology, Okayama University***(Received February 22, 2010)****(Accepted March 29, 2010)**

A fully automated pretreatment system based on sequential injection solid-phase extraction (SPE) coupled to a graphite furnace atomic absorption spectrometer (Auto-Pret-GFAAS system) was developed to determine trace amounts of cadmium and lead. A handmade minicolumn packed with a chelating resin was used for the preconcentration of both metals. All protocol for the on-line SPE method was controlled by home-made software. A trigger switch that was placed next to the graphite furnace was used to synchronize the home-made software with built-in software in the GFAAS. One milliliter of sample solution was flowed through into the minicolumn, the analytes were collected and concentrated on the solid phase, and the analytes were eluted with nitric acid (3 M), and detected by GFAAS. The limits of detection (3σ) for cadmium and lead were 0.20 and 2.6 ng L⁻¹, respectively. The sample throughput was 47 h⁻¹ for 1 mL sample loading. The proposed sensitive method with the original Auto-Pret-GFAAS system was applied to the determination of cadmium and lead in tap water and in leached solutions from ceramic ware using 4% acetic acid.

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