

Modificatin of Amberlite XAD-2 Resin With Iminodi Acetic Acid for Preconcentration and Determination of Cadmium in Sea Water Samples

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Abstract

Water pollution by heavy metals causes serious ecological problems in the world. Therefore, determination of heavy metals such as cadmium in the enviroment samples are needful today. In order to detect metal ions at very low concentration , it is necessary to have a preconcentration to achieve opphorite concentration above the detection limit of analyzing instrument. The used preconcentration methods are based on solid adsorbents which are simple, rapid and usually leads to eliminate the interference elements from the matrix. Amberlite XAD-2 (polystyrene-divinylbenzene polymer) is a very used resin in preconcentration procedure, thanks to its good physical and chemical properties, such as porosity, high surface area, durability and purity.

In this study, cadmium ions was absorbed during passage through amberlite XAD-2 resin, modified with iminodi acetic acid. Also, the influence of pH was studied and the best pH for this study was 7.5, with relevant recovery of higher than 90%. The proposed procedure was applied for cadmium determination by Flame Atomic Adsorbtion Spectroscopy (FAAS) after preconcentration in natural water samples. The achieved recovery and its standard deviation, measured by standard addition technique showed that the proposed procedure had good accuracy, enrichmant factor, preconcentration factor and simplicity.

Keywords: *Amberlite XAD-2, Natural water samples, FAAS.*
