

Preparation and adsorption performance of cyclam functionalized chelating resin towards divalent metal ions from aqueous phase

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Solid phase extraction using a chelate resin is one of the most practical ways for the selective separation of specific metal ions from various water sources. A novel chelating resin containing polyazamacrocyclic units was prepared by the reaction of chloromethylated poly (styrene-divinylbenzene) resin with 1,4,8,11-Tetra azacyclotetradecane (cyclam) derivative. The resulting cyclam-PS resin was characterized with the FT-IR, elemental analysis, SEM and TGA. The adsorption behavior of the cyclam-PS resin for divalent metal ions in aqueous solution containing different amount of metal ions at different pH values was studied by batch adsorption method. This work was supported by the National Research Foundation of Korea (NRF) grant funded by the Ministry of Science, ICT & Future Planning (No. 2012R1A2A1A01009683) and the Ministry of Education (No. 2009-0093816).