

Abstract

The main objective of the thesis was the determination of lead concentration in model aqueous solutions of 4-(2-Pyridylazo)-resorcinol complexing reaction with lead cation in 2-Amino-2-hydroxymethyl-propane-1,3-diol hydrochloride buffer (TRIS buffer). The UV/VIS molecular spectrometry in static arrangement was chosen with subsequent application of sequential injection analysis in flow arrangement. Calibration curve was measured and both methods were assessed. Detection threshold was $0,026 \text{ mg dm}^{-3}$ in case of static arrangement and $0,70 \text{ mg dm}^{-3}$ in case of flow arrangement. The interference analysis was performed, with metallic ions (Cu^{2+} , Zn^{2+} , Sn^{4+}) being the most significant interferents, which also create a chromatic complex with 4-(2-Pyridylazo)-resorcinol. The interference effects were weak and almost not present for barium and potassium. Thesis concludes with determination of lead concentration in model specimen using flow arrangement. The determination by calibration curve was insufficient due to interfering ions and thus it had to be determined by standard addition method.

Keywords

Lead, 4-(2-pyridylazo)-resorcinol, TRIS buffer, flow sequential injection analysis, UV/VIS molecular spectrometry, interference effects