

Abstract

The aim of this work was to experimentally observe the impact of various potential interferents on the determination of selenium using UV-photochemical generation of its volatile species in formic acid media with AAS detection. HNO_3 , As^{3+} , Co^{2+} , Cu^{2+} and Ni^{2+} were chosen as model substances affecting the analyte response. All these substances were found significant interferents. Some of these substances (HNO_3 , As^{3+} , Cu^{2+} , Ni^{2+}) increased the signal at low concentration, but the signal of selenium decreased significantly at their higher concentration in a sample. Inverse shape of the dependence of the analyte response on the interferent concentration was observed for Co^{2+} ions. It was found that the reagent Chelaton II, often used in analytical chemistry to mask interferents, also caused a suppression of selenium signal. On the contrary, other masking agents tested (triethanolamine, ammonium formate) did not lead to any interference.

Key words: selenium, UV- photochemical generation of volatile compounds, formic acid, AAS, interference, masking