

Separation of Silver from Chloride and Sulfate Matrices by Fractional Condensation in a TwoStep Graphite Atomizer

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Abstract

The influence of the excess of sodium chloride and potassium sulfate in a sample on the signal of atomic absorption of silver in a two-step graphite atomizer comprising a cup-evaporator and a tube-atomizer heated independently has been investigated. It is shown that the preliminary fractional condensation of the element to be determined in the tubeatomizer can be used to decrease the interferences from the matrix. The undesirable gasphase condensation of the matrix vapor is eliminated by heating the tube to a temperature close to the temperature of desorption of silver from its surface (700-800°C). The attained level of the influence of the matrix on the signal of atomic absorption is approximately equal to the level of the interferences from the matrix in a graphite atomizer with transverse heating and is higher than that in an atomizer with longitudinal heating.

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Keywords

atomic-absorption analysis, electrothermal atomization, fractional condensation, influence of the matrix