



WATER-SOLUBLE TERTIARY AMINES FOR SAMPLE PREPARATION IN ATOMIC SPECTROSCOPY: AN OVERVIEW (M 5)

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Despite the predominance of wet acid digestion methods, would it not be more appropriate to carry out sample preparations in alkaline medium? Alkaline digestion procedures, however, will not become as general as acid digestions owing to their chemical properties, such as the cation hydrolysis at high pH's or for some easily hydrolysable cations even in less acidic solutions. Nevertheless, for some elements and samples, the use of an alkaline medium should be preferred for sample preparation, owing to solubility, matrix and volatility characteristics. This work focuses on the use of water-soluble tertiary amines for sample preparation for atomic spectroscopy. A commercial mixture of tertiary amines called CFA-C (Spectrosol, Warwick, NY) was initially proposed to neutralize hydrofluoric acid. Subsequently, its application has been extended in atomic spectroscopy. Beneficial effects on sample nebulization, isobaric interferences, and sensitivities are observed for inductively coupled plasma mass spectrometry (ICP-MS) and optical emission spectrometry (ICP-OES). Efficient extraction of elements in animal and vegetable tissues, dilution of milk samples, and improvement of automatic sampler action in graphite furnace atomic absorption spectrophotometry also are achieved. These spectroscopic applications are discussed and the main effects are critically reviewed.

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