Total Antimony And Antimony Speciation Measurements In Environmental Matrices

F KRIKOWA, W MAHER, S FOSTER AND M ELLWOOD

University of Canberra Bruce 2601 Canberra Australia
Email:Bill.Maher@canberra.edu.au

The measurement of total antimony and antimony species concentrations in marine sediments and biological tissues is described. Inductively coupled plasma- mass spectrometry (ICPMS) can be used to measure antimony concentrations down to ~ 0.2 μg/g dry mass. Below these concentrations electrothermal atomic absorption spectroscopy (EAAS) gives more accurate results. EAAS is not as sensitive as ICPMS, with a measurement level of ~ 2 μg/L ((0.2μg/g dry mass) for a normal 20-50 mL injection. To obtain the necessary detection limits, multilayering of sample extracts, i.e. multiple injections, drying and ashing before atomization, is required. Antimony species can be extracted from sediments and biological tissues with dilute nitric acid using microwave heating and antimony species separated and quantified by high performance-liquid chromatography-ICPMS.