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2.3.1 Polynuclear Aromatic Hydrocarbons and Polychlorinated Biphenyls; 2.3.2 Total Petroleum Hydrocarbons; 2.3.3 SFE of Wet Soils; 2.3.4 Pesticides; 2.3.5 Dibenzofurans/Dioxins; 2.4 Conclusions; 3 Validation and Quality Control with Atomic Absorption Spectrometry for Environmental Monitoring; 3.1 Introduction; 3.1.1 Use of Atomic Absorption Spectrometry in Environmental Monitoring; 3.1.2 The Need for Quality Control; 3.1.3 The Importance of Consistent Data; 3.1.4 Standardized/Reference Methods or Quality Control?; 3.1.5 The Degree of Analytical Quality Control; 3.1.6 Quality Control Principles; 3.2 Method Validation; 3.2.1 Basic Analytical Principles; 3.2.1.1 Preparation of Calibration/Standard Solutions; 3.2.1.2 Use of Characteristic Concentration/Mass; 3.2.2 Calibration; 3.2.2.1 The Importance of Calibration; 3.2.2.2 Influence of the Blank; 3.2.2.3 Type of Calibration Curve; 3.2.2.4 Linear or Non-Linear-Calibration; 3.2.2.5 Calibration by the Method of Analyte Additions; 3.2.2.6 Calibration Quality Coefficients; 3.2.3 Establishment of Performance Characteristics; 3.2.3.1 Assessment and Influence of Contamination; 3.2.3.2 Estimation of Detection Limits; 3.2.3.3 Recovery Measurements; 3.2.3.4 Precision; 3.2.3.5 Comparison with Alternative Techniques/Methods; 3.2.3.6 Analysis of Certified Reference Materials; 3.3 Quality Control; 3.3.1 Frequency of Analysis and Choice of IQC Materials; 3.3.2 Preparation of In-house IQC Materials; 3.3.2.1 Establishment of IQC Target Values and Limits; 3.3.3 Use of Quality Control; 3.3.3.1 Defining a Quality Control Procedure; 3.3.4 Systematic and Random Errors; 3.4 External Quality Assessment; 3.5 Conclusions; 4 Application of ICP - OES Techniques in Environmental QC; 4.1 Introduction; 4.2 Theory of the ICP-OES Technique

Sommario/riassunto

Environmental technology plays an increasingly important role in today's world. This has led to many new developments in legislation and monitoring of environmental pollutants. A comprehensive treatment of these current trends is presented in this book. The reader is helped by a sound understanding of modern instrumental methods such as GC/MS, thermal desorption and purge-trap methods, that are available to meet these legal requirements. Many practical applications assist familiarization with these techniques. This work pays particular attention to methods of monitoring different types