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Nota di contenuto	METHODS FOR ENVIRONMENTAL TRACE ANALYSIS; Contents; Series Preface; Preface; Acronyms, Abbreviations and Symbols; About the Author; 1 Basic Laboratory Skills ; 1.1 Introduction ; 1.2 Safety Aspects ; 1.3 Recording of Practical Results; 1.4 Units ; 1.5 Sample Handling: Liquids ; 1.6 Sample Handling: Solids ; 1.7 Preparing Solutions for Quantitative Work ; 1.8 Presentation of Data: Tables ; 1.9 Presentation of Data: Graphs ; 1.10 Calculations: Dilution Factors ; Further Reading ; 2 Investigative Approach for Sample Preparation ; 2.1 Introduction ; 2.2 Quality Assurance ; References 3 Sampling 3.1 Introduction ; 3.2 Sampling Methods ; 3.3 Number of Samples ; 3.4 Sampling Soil and Sediment ; 3.5 Sampling Water ; 3.6 Sampling Air ; References ; 4 Storage of Samples ; 4.1 Introduction ; 4.2 Methods ; References ; SAMPLE PREPARATION FOR INORGANIC ANALYSIS ; 5 Solids ; 5.1 Introduction ; 5.2 Decomposition Techniques ; 5.3 Dry Ashing ; 5.4 Acid Digestion (including the Use of Microwaves) ; 5.4.1 Microwave Digestion ; 5.4.2 Microwave Digestion Procedure ; 5.4.3 Fusion ; 5.5 Speciation Studies ; 5.6 Selected Examples of Metal Speciation ; 5.6.1 Mercury ; 5.6.2 Tin

5.6.3 Arsenic 5.6.4 Chromium ; 5.7 Selective Extraction Methods ; 5.7.1 Plant Uptake Studies ; 5.7.2 Soil Pollution Studies ; 5.7.3 Single Extraction Procedures ; 5.7.4 Sequential Extraction Procedure ; 5.7.5 Food Studies ; 5.8 Case Studies on Total and Selective Methods of Metal Analysis ; 5.8.1 Example 5.1: Total Metal Analysis of Soil, followed by Flame Atomic Absorption Spectroscopy ; 5.8.2 Example 5.2: Total Metal Analysis of Soil Using X-Ray Fluorescence Spectroscopy - Comparison with Acid Digestion (Method 3050B), followed by Flame Atomic Absorption Spectroscopy
5.8.3 Example 5.3: Sequential Metal Analysis of Soils, followed by Flame Atomic Absorption Spectroscopy References ; 6 Liquids - Natural and Waste Waters ; 6.1 Introduction ; 6.2 Liquid-Liquid Extraction ; 6.3 Ion-Exchange ; 6.4 Co-Precipitation ; References ; SAMPLE PREPARATION FOR ORGANIC ANALYSIS ; 7 Solids ; 7.1 Introduction ; 7.2 Soxhlet Extraction ; 7.2.1 Example 7.1: Soxhlet Extraction of Polycyclic Aromatic Hydrocarbons from Contaminated Soil ; 7.3 Shake-Flask Extraction ; 7.3.1 Example 7.2: Shake-Flask Extraction of Phenols from Contaminated Soil ; 7.4 Ultrasonic Extraction
7.5 Supercritical Fluid Extraction 7.5.1 Instrumentation ; 7.5.2 Example 7.3: Supercritical Fluid Extraction of Organochlorine Pesticides from Contaminated Soil and 'Celite' ; 7.6 Microwave-Assisted Extraction ; 7.6.1 Instrumentation ; 7.6.2 Example 7.4: Atmospheric Microwave-Assisted Extraction of Polycyclic Aromatic Hydrocarbons from Contaminated Soil ; 7.6.3 Example 7.5: Pressurized Microwave-Assisted Extraction of Polycyclic Aromatic Hydrocarbons from Contaminated Soil ; 7.7 Pressurized Fluid Extraction ; 7.7.1 Instrumentation
7.7.2 Example 7.6: Pressurized Fluid Extraction of DDT, DDD and DDE from Contaminated Soil

Sommario/riassunto

Provides the basic skills and information required to prepare an environmental sample for analysis. Divided into two sections, i.e. Inorganic Analysis and Organic Analysis, this book covers selected techniques, principally atomic spectroscopy and chromatography. Using flow diagrams to augment the experimental information, it highlights the most appropriate methods and the likely results. Detailed experimental information provided in an easy-to-follow style with illustrations<li>Describes the specific sample preparation approaches necessary to analyse a particular sample type<li>Discussi