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| Lingua di pubblicazione | Inglese |
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2. Record Nr. UNINA9911019473803321

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| Titolo | Determination of trace elements / / edited by Zeev B. Alfassi |
| Pubbl/distr/stampa | Rehovot, Israel, : Balaban Publishers<br>Weinheim ; ; New York, : VCH, c1994 |
| ISBN | 9786611758776<br>9781281758774<br>1281758779<br>9783527615773<br>3527615776<br>9783527615766<br>3527615768 |
| Descrizione fisica | 1 online resource (623 p.) |
| Altri autori (Persone) | AlfassiZeev B |
| Disciplina | 543 |
| Soggetti | Trace elements - Analysis<br>Trace elements - Speciation |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Note generali | Errata sheet laid in. |
| Nota di bibliografia | Includes bibliographical references and index. |
| Nota di contenuto | Determination of Trace Elements; Contents; 1. Systematic errors in |

trace analysis; 1.1 Introduction; 1.1.1 General aspects of extreme trace analysis; 1.1.2 Direct instrumental determination methods; 1.1.3 Multi-stage procedures; 1.1.4 Further general important statements; 1.2 Systematic errors and their avoidance; 1.2.1 Volatilization; 1.2.2 Adsorption; 1.2.3 Blanks from vessels, vessel materials and working tools; 1.2.4 Blanks from the reagents; 1.2.5 Blanks from airborne dust; 1.2.6 Contamination by sample handling; 1.2.7 Problems due to changes of the valency state
1.3 Systematic errors during the analytical procedure1.3.1 Sampling, sample storage and Pretreatment; 1.3.2 Decomposition; 1.3.3 Separation; 1.4 Basic rules for the recognition and elimination of systematic errors; 1.5 Conclusion; 2. Limits of detection and accuracy in trace elements analysis; 2.1 Introduction; 2.2 Errors in analytical results; 2.3 Accuracy; 2.4 Measuring trace concentrations; 2.5 The problem of detection; 2.5.1 Random error of blank responses; 2.5.2 Errors of the first kind - the critical level (a posteriori detection)
2.5.3 Errors of the second kind - the limit of detection (a priori detection)2 5.4 Limits to the use of the definitions of Lc atid LD; 2 5.5 Regression theory approaches to the problem of detection; 2.6 Practical applications; 2.7 Reporting results at small concentrations; 2.8 Conclusions and recommendations; Sampling and sample preparation; 3.1 Introduction; 3.2 Changes in trace element composition; 3.2.1 Element specific changes; 3.2.2 Sample specific changes; 3.3 Pre-sampling considerations; 3.4 Aspects of sampling; 3.4.1 Establishment of analytical control
3.4.2 Sampling error in a test portion3.4.3 Uniformity of laboratory samples; 3.4.4 Uniformity of subsamples; 3.4.5 The gross sample; 3.5 Sample decomposition; 4. Separation and preconcentration of trace elements; 4.1 Separation and preconcentration of trace elements by coprecipitation; 4.1.1 Introduction; 4.1.2 Mechanism; 4.1.3 Coprecipitation with inorganic precipitants; 4.1.4 Coprecipitation with organic collectors; 4.2 Separation and preconcentration of trace elements by flotation; 4.2.1 Introduction; 4.2.2 Principle; 4.2.3 General procedures
4.3 Preconcentration and separation of trace elements by solvent extraction4.3.1 Introduction; 4.3.2 Extraction of trace elements; 4.4 Separation and preconcentration of trace elements by ion-exchange; 4.4.1 Introduction; 4.4.2 Ion-exchange resins; 4.4.3 Equilibrium and selectivity; 4.4.4 Practical column operation; 4.4.5 Preconcentration; 4.4.6 Ion chromatography; 4.5 Separation and preconcentration by sorption; 4.5.1 Introduction; 4.5.2 Activated carbon; 4.5.3 Porous polymers; 4.5.4 Complex-forming adsorbents; 4.5.5 Natural polymers
5. Determination of trace elements by atomic absorption spectrometry

Sommario/riassunto

The best way to determine trace elements!This easy-to-use handbook guides the reader through the maze of all modern analytical operations.Each method is described by an expert in the field.The book highlights the advantages and disadvantages of individual techniques and enables pharmacologists,environmentalists, material scientists, and food industry to select a judicious procedure for their trace elementanalysis.