

Book reviews

R. Wood, L. Foster, A. Damant, P. Key, *Analytical Methods for Food Additives*, Woodhead Publishing Ltd, Cambridge, UK, 2004 (x+258 pp., ISBN 0-85573-7221).

Food additives can perform various technological functions, for example, preservatives can increase shelf life and antioxidants can protect against rancidity. The applications of the additives in food can be divided into several parts: colours in food, sweeteners, miscellaneous additives (other than colours and sweeteners) and flavourings. They are all controlled by separate legislations. To ensure consumer safety, existing intake estimations and safety monitoring of additives requires robust quantitative analytical methods for the accurate measurement of additives in food. Although established analytical methods for many additives have been discussed in the scientific literature, this volume provides an authoritative 'one-stop' publication that helps scientists and engineers to understand the principles and procedures underlying the analytical methods, and to utilise them effectively.

Analytical Methods for Food Additives provides a structured and systematic account of the most widely used available methods for the determination of additives in specified foods. The performance characteristics, where available, and recommendations for further research to improve method availability are also covered. The volume addresses the analytical methods for 26 major additives, which span from azorubine and adipic acid to sunset yellow and saccharin. For each of these additives, an introduction, a summary of available methods of analysis, procedures and parameters, recommendations and appropriate references are provided. There are also 79 tables in this volume, which summarise available methods, statistical performance parameters for the methods, and results of collaborative trials using the methods.

In conclusion, *Analytical Methods for Food Additives* is an up-to-date, clearly written and well-presented compendium that is a valuable reference tool for food analysts, which will help to ensure the accurate measurement of additives in foods.

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J. H. Gross, *Mass Spectrometry: A Textbook*, Springer, Berlin, 2004 (xviii + 518 pp., £46.00, ISBN 3-540-40739-1).

Mass spectrometry is an indispensable analytical tool in chemistry, biochemistry, pharmaceutical science and medicine. It can supply molecular weight information and serves as a powerful tool for analytical applications and basic research. Almost all techniques for achieving the goals of ionisation, separation and detection of ions in the gas phase can be applied in mass spectrometry.

This volume is composed of twelve sections. The first section introduces the basic principles of mass spectrometry and some associated concepts, such as the mass spectrum. The second chapter deals with the fundamentals of gas phase ion chemistry, i.e. ionisation, excitation, ion thermochemistry, ion lifetimes, and reaction rates of ion dissociation. The isotope properties in mass spectrometry are discussed in the next chapter. Isotopic masses, their relation to elemental weights, and high-resolution and accurate mass measurements are discussed in this chapter. The fourth chapter discusses different types of mass analysers in order to understand their basic principles of operation and their specific properties. Detailed information about technical and practical aspects concerning the construction of electron ionisation (EI) ion sources and sample introduction systems is presented in Chapter 5, followed by the introduction of common fragmentation pathways of organic ions and the resulting methodology for the interpretation of EI mass spectra, in Chapter 6. The principles and some aspects of chemical ionisation (CI) are covered in the next chapter. CI is one of the soft ionisation methods, along with field