

Book Reviews

Handbook of Basic Tables for Chemical Analysis, 2nd Edition

T.J. Bruno and P.D.N. Svoronos. (2003, CRC Press, Boca Raton, USA) 672 pages, ISBN 0-8 493-1573-5

Basic tables are one of the most useful basic data sources for practicing scientists and research students who must use various aspects of chemical analysis in their work. *Handbook of Basic Tables for Chemical Analysis, 2nd Edition* is a single source of information about 'instrumental techniques' (tables on chromatography, spectroscopy and chemical methods), which are most useful in solving common analytical problems. These tables contain information collected from current research papers and provide data that is not easily obtainable elsewhere.

This volume is composed of 15 chapters. Tables of various types of chromatography method are provided in the opening four chapters. Modern methods of solid phase microextraction (SPME), headspace analysis, and new information on detector optimisation in gas chromatography (GC) are discussed in the first chapter. The second chapter covers the most recent chiral stationary phases, detector information, and revised solvent tables in high-performance liquid chromatography (HPLC). General basic tables about solvents, mobile phases and spray reagents for thin-layer chromatography (TLC), and tables of solubility parameters in supercritical fluid extraction and chromatography, are provided in the next two chapters, respectively.

Chapters 5 and 6 provide tables about electrophoresis and electroanalytical methods. This includes information about separation ranges and preparation processes of polyacrylamide gels, and tables about standard parameters of various electrochemical techniques. Tables detailing ultraviolet and infrared spectrophotometry are displayed in the following two chapters, respectively. This includes data about solvents, common liquids and ultraviolet functionality, optical materials, solvents and other related parameters in infrared spectroscopy. Chapter 9 provides detailed information about chemical shifts in NMR spectroscopy, whilst chapters 10 and 11 present standard parameter information for mass spectrometry and atomic absorption spectrometry, respectively. The final 4 chapters focus on general data about qualitative tests, solution properties and laboratory safety, and a selection of miscellaneous tables. The chapter on laboratory safety

provides information on all kinds of chemical hazards and electrical hazards in the analytical laboratory. A comprehensive subject index facilitates rapid location of information.

The collection of data tables provides an up-to-date, self-contained source of information, which is of great value as an essential reference tool. It is highly recommended to all practicing scientists and research students who use various aspects of chemistry analysis in their research and design their own analytical methodologies.

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Available online 15 July 2004

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doi:10.1016/j.carbpol.2004.06.009

Textile Terms and Definitions, 11th edition

M.J. Denton and P.N. Daniels, editors. (2002, The Textile Institute, Manchester, UK) ix + 408 pages, ISBN 1-870-37244-1, £70-00

Textiles are one of the most widely utilised types of materials in modern society and are therefore indispensable in people's life, e.g. clothing, table linen, canvas, lace, etc. The textile manufacturing industry is thus a very large and important industry, and there are many individuals studying and working in this area and it does mainly include carbohydrate polymers—both in unmodified and modified forms. This means that there is a definite need for a clear and concise dictionary of textile terminology. *Textile Terms and Definitions* therefore provides a structured and systematic, up-to-date account of textile terms and definitions and defines around four thousand textile terms, spanning every sector of textiles from fibres to finished products.

The definitions which are supported by numerous illustrations are compiled by panels of experts in their

respective fields of natural fibres, manufactured fibres, spinning, weaving, knitting and lace, nonwovens, narrow fabrics, finishing, clothing, floor-coverings, technical and testing and quality. Many new definitions (especially in clothing), and certain basic terms in textile and fashion design are covered in this edition for the first time. The ISO codes and symbols for manufactured fibres, systems for yarn number or count, and SI units and conversion factors are also listed in the final part of the book. Textile terminology in this book is defined simply and effectively for both the professional and the students, and also newcomers to the field.

This volume is the authoritative and comprehensive reference work on textile terminology and is an essential reference manual for all researchers in academia and industry with interests in the design, manufacturing, analysis, marketing and use of textile products.

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doi:10.1016/j.carbpol.2004.06.018

Textures in Food Volume 1: Semi-solid Foods

Brain M. McKenna, editor (2003, Woodhead Publishing Ltd, Cambridge, UK) xvi + 425 pages, ISBN 1-85573-673, £135.00

At the question ‘How to make good food, and for cheaper if possible’; food manufacturers found an answer in food rheology science. Indeed, the first assessment of food quality is dictated by the ‘mouthfeel’ which is the sensory experience derived from the sensations in the mouth and on the tongue after ingestion of the food. The ‘mouthfeel’ is influenced by the food texture. Therefore, food manufacturers are interested in generating a food texture that would improve the ‘mouthfeel’ using cheap ingredients, replacing expensive ones, and thus reducing costs of production. Semi-solid products such as sauce, yoghurts and ice cream are more and more numerous so the study of their structure and its influence on texture and thereby the ‘mouthfeel’ is also increasing.

This volume discusses the texture of semi-solid food and is divided two parts. Part I focuses on food structure and texture including general information about the rheology of emulsions, phase transitions and phase separation in foods

as well as the characteristics of starch-based foods, biopolymer systems, and two chapters about rheology techniques. Food rheology is the study of deformation and flow of food under defined conditions of stress and strain. The study of the response of the food material is now measure in-line (i.e. directly in the food processing chain). It often involves the measurement of viscosity using capillaries or disc viscometers. Part II focuses on product development and enhancement including emulsion and gel engineering, emulsifiers and thickeners and ultimately, specific examples of yoghurts, ice cream, spreads and soups, and sauces and salads. The water-oil emulsions such as sauces, soups and salad dressing and made with added emulsifiers like starch or xanthan in order to thicken and stabilise the product.

To summarise, *Textures in food Volume 1: Semi-solid Foods* is the first of two volumes that provide detailed information on the principles and applications of rheology, and is therefore an excellent reference for students, academics and industrial researchers interested in food rheology, in particular with respect to food structure.

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Available online 24 July 2004

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doi:10.1016/j.carbpol.2004.06.019

Chemical and Functional Properties of Food Saccharides

Piotr Tomasik, editor (2004, CRC Press, Boca Raton, USA)
ISBN 0-8493-1486-0, £113-00

Food saccharides are present everywhere in the daily diet, either in their natural form, e.g. starch in potatoes, cellulose and fructans in plants, and pectins in fruit, or in modified forms in prepared food products. Although their basic structures are relatively simple, polysaccharides have extensive physiochemical properties that have made them useful in food processing applications. Polysaccharides extracted from raw material sources are used in the food industry mainly as emulsifiers or thickeners, e.g. the use of starches in soups and pectins in jam. Research to increase the application and nutritional value of food saccharides is continuous and increases as food markets increase.

Chemical and Functional Properties of Food Saccharides presents in an up to date context, information on the sources, structures, functional properties and uses of the