

New Books

Lloyd A. Witting, Book Review Editor



Functionality and Protein Structure, Edited by Akiva Pour-El, ACS Symposium Series 92, (American Chemical Society, Washington, DC, 1979, 243 p., \$24.00).

This book, based on a symposium sponsored by the ACS Division of Agriculture and Food Chemistry at the 175th meeting of the American Chemical Society, Anaheim, CA, March 13, 1978, has an important mission. In the words of its editor, "... it is hoped that this volume will be a ground-breaking one to set some rules, to develop a consistent terminology and to point the way to further research in this area. . . ." Pour-El sets the theme of the book in the preface by providing definitions of key terminology and a brief discussion of the research approaches used to study the relationship between a protein's molecular properties and functionality.

The book is divided into 12 chapters that report original research on: oilseed protein properties as related to emulsions and foams; aggregation and denaturation in gel formation, wheat gluten and bread-making, alkali-induced lysinoalanine formation, adsorption behavior and influence of peptide chain length on taste. Each chapter is well referenced, and the book is a good information source for those researching protein functionality.

The book makes clear a need for standardization of functional property testing procedures and the need for standardization of functional property testing procedures and the need for researchers to adopt a standard terminology. Nevertheless, the results presented in the book will stimulate the readers and provide useful guidelines for the design of experiments to further study the relationship of protein structure and functionality.

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Application of High Performance Liquid Chromatography, by A. Pryde and M.T. Gilbert, (Chapman and Hall Ltd., 11 New Fetter Lane, London EC4P 4EE, 1979, 255 p., \$0.00).

This book is divided into five parts: theory and practice of HPLC (53 pp.); the application of HPLC in the pharmaceutical industry (52 pp.); applications of HPLC in biochemical analysis (56 pp.); environmental analysis by HPLC (18 pp.); and miscellaneous applications (10 pp.). Nine appendices cover a variety of topics including tabular data needed for the Wilke-Chang equation, electronic absorption bands for representative chromophores, and a comparison of mesh numbers and aperture sizes. The biochemical section includes chapters on lipids, steroids including phytosterols, saponin, cardiac glycosides and bile acids, and prostaglandins. Aflatoxins and patulin are covered in the chapter on pesticides, carcinogens and industrial pollutants. Analysis of food products is mentioned briefly in the miscellaneous applications section.

At this time the analysis of lipids tends to be hampered by detector problems. Many of the usual lipid solvent mixtures traditionally used in open columns are not suitable for use with UV detectors. The analysis of complex natural lipid mixtures usually requires a gradient elution which precludes use of the refractive index detector. It is

only a question of time, however, before this analytical procedure will be perfected for lipid analyses.

This book is most useful to the person new to HPLC or the chromatographer who must be prepared to run almost anything on request. Each will find ideas for column and mobile phase selection. The 876 references appear to contain a high proportion from the period 1975-1977.

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Guide to Basic Information Sources in Chemistry, by Arthur Antony, (Halsted Press, J. Wiley & Sons, New York, 1979, 219 p., \$14.95).

It is a pleasure to see this small volume appear. Today's researcher is in need of assistance when searching the large and varied literature of chemistry. This book makes the task easier for both beginners and seasoned veterans. Searching the literature is often a confusing, dreary task; any information that lightens this burden is welcome. The book attempts to list most of this literature sources of chemistry in twenty-two chapters: guide to the literature, chemical abstracts, other abstracting series, computer searching, periodicals, other primary publications, dictionaries, encyclopedias, data compilations, Beilstein and Gmelin, and chemical information search strategies. In addition, other information sources are covered. An author and title index for specific work is included as is a subject index which accesses the contents of the varied reference works discussed in the book.

The book is relatively easy to read, with large type face. This reviewer found it to be quite useful in answering graduate student questions on sources and recommends it highly as a literature reference work.

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Tensid Taschenbuch, (Carl Hanser Verlag, Munich, 1978, 581 p., DM98).

This German-language book is unique insofar as it appears to be the first handbook dealing only with surfactants. It is divided into four major sections. The first deals with the chemistry of surfactants and their applications, and these two areas are covered in nine chapters written by experts in the respective fields. While the format does not permit a detailed discussion, the fundamentals or surfactant chemistry are covered adequately in a space of 106 pages. Likewise, the applications' field is discussed well in a space of 103 pages. A compilation of various use tests and short description of each test, sometimes with illustrations, is particularly useful for readers engaged in the practical aspects of surfactant chemistry. Many detailed chemical structures are given of surfactants and additives such as brighteners. In addition, infrared spectra of the major types of surfactants are shown. Many illustrations are furnished to make it easy for a novice in the field to

understand the physical chemistry of surfactants. The first section also includes a listing of German and international organizations in the surfactant field. Organizations listed are mostly European and do not involve U.S. participation.

The second section of the book deals with environmental aspects of surfactants, dealing primarily with legislation in Germany and other Common Market countries and therefore of limited interest to U.S. readers.

The third section consists of 122 pages of tables of physical data and flow sheets. The first part contains physical data such as molecular weights, melting points, boiling points, densities, hydroxyl values, indices of refraction, etc. for raw materials, intermediates and solvents used in surfactant synthesis. Here we find data for alkanes, alkenes, alkylbenzenes, fatty acids, fatty alcohols, fatty amines, alkanolamines and fatty alkanolamides, to mention just a few. Since the use of such tables does not require a thorough knowledge of German, this part would be very useful for American workers in the field.

The second part consists of 39 pages of physical data for surfactants and their intermediates. The data listed covers only European products which may not necessarily be identical with analogous U.S. products.

The third part of this section contains flow sheets for the production of surfactant intermediates such as oxo alcohols, Ziegler-type alcohols, alkylbenzenes, and schematic diagrams for sulfonation and neutralization and spray drying. Flow diagrams are also given for the production of ethylene and propylene oxides, morpholine and alkanolamines. The straightforward flow diagrams should be of interest to readers wanting to learn about such industrial processes. This part is followed by miscellaneous tables. The table of various measurement units might be of interest since some German units are different from those in the

English-speaking world (e.g., the unit of conductivity is Siemens rather than mho). The next part of the section concerns various German governmental regulations. The last part of this section lists names and addresses of associations and organizations active in the surfactant field. The listing of the AOCS under trade associations rather than scientific societies might have been an oversight, but the listing of our old Chicago address is unforgivable.

Section IV, 190 pages, a listing of all European trade names, is probably the least useful part of the book. Rather than having trade names in alphabetical order, as in McCutcheon, they are listed in alphabetical order of the manufacturers. Unless the reader knows the manufacturer's name, he has no way of finding out about the chemical nature of a given product.

The book concludes with a short appendix of a buyer's guide of surfactants and raw materials.

This book is aimed primarily at a European readership, knowledgeable in scientific German, working in production or research in some phase of the surfactant industry. It is clearly written and well illustrated and provides references to mostly European, and primarily German, literature. A few typographical errors were spotted. Because of language problems and heavy orientation toward German products, legislation, etc., it will probably be of limited interest to U.S. readers. On the other hand, the concept of such a reference book is excellent, and one can only hope that a similar book will be published some day for the English-speaking world.

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New Publications



The Proceedings of the 10th Meeting of the Spanish Committee on Detergents is now available. The meeting was held in March 1979 at Barcelona. The 25 presentations are published in each speaker's language—Spanish, English or French. Cost is US \$55. Contact: J.J. Garcia Dominguez, Comite Espanol de la Detergencia Tensioactivos y Afines (C.E.D.), Centro de Investigacion y Desarrollo, "Patronato Juan de la Cierva," C/Jorge Girona Salgado, S/N, Barcelona 17, Spain.



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