

Publications

Book reviews

Handbook of Chemical Property Estimation Methods: Environmental Behavior of Organic Compounds, edited by W.J. Lyman, W.F. Reehl and D.H. Rosenblatt (McGraw-Hill, 1221 Avenue of the Americas, New York, NY 10020, 1982, 960 pp., \$42.50).

This book focuses on 26 important properties of organic compounds that are of environmental interest. These properties include octanol/water partition coefficient, solubility in water and various solvents, adsorption coefficient for soils and sediments, bioconcentration factor in aquatic organisms, acid dissociation constants and rate of hydrolysis, rate of aqueous photolysis and biodegradation, atmospheric residence time, and activity coefficient. Methods are detailed for boiling point, heats of vaporization, vapor pressure, volatilization from water and soils, diffusion coefficients in air and water, flashpoints of pure substances, density, surface and interfacial tension, viscosity, heat capacity, thermal conductivity, dipole moment, and index of refraction. The appendixes include a discussion of linear regression analysis, a bibliography of data sources for the standard chemical properties, and a discussion of error evaluation. Literature documentation and the index appear to be ample. This handbook provides a discussion of each property and its importance, as well as an overview of the available estimation methods. A description of and instructions for using each method with examples are also provided. With these instructions the user should be able to carry out chemical property estimations with a calculator in a very short time. Chemists, engineers and technical managers can use the information in this book to carry out chemical spill modeling, determine the fate and transport of chemicals in the environment and modify process design, to name a few applications. The price of this handbook is reasonable for its size and contents and should not keep it from the desks of those requiring the information it contains.

Maillard Reactions in Food: Chemical, Physiological and Technological Aspects, *Progress in Food and Nutrition Science*, Vol. 5, Numbers 1-6, edited by C. Eriksson (Pergamon Press Inc., Maxwell House, Fairview Park, Elmsford, NY 10523, 1981, 501 pp., \$100).

This volume is the result of an international symposium on the Maillard reaction in foods held at the celebration of the 150th anniversary of the Chalmers University of Technology, Göteborg, Sweden, in September 1979. It represents the contributions of about 100 scientists who participated

in the conference and workshops, and presents the latest information on the Maillard reaction in all of its aspects. The reaction is central to the development of desirable and often times undesirable flavors and odors in foods. It also leads to undesirable nutritional losses of amino acids in certain cases. For these reasons there has been a renewed interest in the nonenzymatic browning reaction. Interest is further heightened by implications and evidence that in certain instances, mutagenic materials are formed via the reaction. The volume, after an introductory review lecture on the nutritional consequences of the Maillard reaction, deals in detail with chemical aspects—low molecular products, active intermediate products, polymeric products—then moves on to physiological aspects—nutritional damage, absorption and metabolism, safety, and in vivo Maillard reactions. The last sections of the book cover technological aspects—milk products, plant products, prediction and measurement of Maillard reactions, Maillard reactions in relation to lipids and a summary of these aspects. Finally, the important contributions to the workshops were summarized. These include novel developments in caramelization, separation and fractionation problems with Maillard reaction mixtures, toxicological evaluations of Maillard products, water activity workshop, and a workshop on volatile products. The chapters are well written and amply documented with literature citations. The subject index is based on individual compounds, chemical reactions and standard biochemical, nutritional and technological keywords. This is a most impressive collection of information concerning current research on the Maillard reaction. It is a valuable resource and should be made available to persons involved in the development of food products where this reaction may be involved. However, its high price will preclude its finding a place on the scientist's bookshelf.

New Syntheses with Carbon Monoxide, edited by J. Falbe (Springer Verlag, 44 Hartz Way, Secaucus, NJ 07094, 1980, 465 pp., \$137).

This book is a completely redone version of one published over 10 years ago. New chapters and information have been included in updating the volume. Chapters are concerned with hydroformylation, oxo synthesis, Roelin reaction, homologation of alcohols, carbonylations catalyzed by metal carbonyls-Reppe reactions, hydrogenation of carbon monoxide. Each chapter deals with reaction mechanisms, solvents and catalysts and illustrates numerous reactions using the process under discussion. The chapters are replete with references including many patents. For example, the

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chapter on hydroformylation contains 1970 citations. The volume is well written and appears to be fairly error free. The index seems to be comprehensive and contains entries to individual compounds as well as processes. While primarily of interest to persons working in the chemical industry, the book contains information relating to the synthesis of aliphatic compounds of interest to *JAOCs* readers.

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New publications

Fire Risk Assessment, STP 762, edited by G.T. Castino and T.Z. Harmathy, ASTM, 1916 Race St., Philadelphia, PA 19103, 1982, 112 pp., soft cover, \$15 (20% discount for ASTM members). Based on a symposium on Fire Risk Assessment held March 1982 at Hilton Head, SC.

Compilation of Fire Test Standards, First Edition 1982, sponsored by ASTM Committee E-5 on Fire Standards, ASTM, 1916 Race St., Philadelphia, PA 19103, 1982, 676 pp., 71 Standards, soft cover, \$39 (20% discount for ASTM members).

Monographs on Atherosclerosis, Vol. 11: Lipoprotein Precipitation, by M. Burstein and P. Legmann, Karger, S. Karger AG, Basel, PO Box CH-4009, Basel, Switzerland, 1982, 131 pp., \$58.25.

Gas Chromatography of Organometallic Compounds, by T.R. Crompton, Plenum Press, Plenum Publishing Corp., 233 Spring St., New York, NY 10013, 1982, 589 pp., \$75 U.S. and Canada, 20% higher elsewhere.

Biochemistry and Metabolism of Plant Lipids, edited by J.F.G.M. Winternans and P.J.C. Kuiper, Elsevier Bio-

medical Press, PO Box 211, 1000 AE Amsterdam, The Netherlands, and Elsevier Publishing Co. Inc., 52 Vanderbilt Ave., New York, NY 10017, 1982, 606 pp., \$85 U.S. and Canada, Dfl. 200 elsewhere. Proceedings of the 5th International Symposium on the Biochemistry and Metabolism of Plant Lipids, Groningen, The Netherlands, June 7-19, 1982.

The ILAC Directory 1981, International Directory of Testing Arrangements and Testing Laboratory Accreditation Systems, ASTM, 1916 Race St., Philadelphia, PA 19103, 1982, soft cover, 350 pp., \$100.

Sunflower Directory, published by the National Sunflower Association (U.S.), box 5193, Fargo, ND 58105, approx. 70 pages including alphabetical listings, geographic listings, selected statistical data and other information, \$5 copy; \$4 for orders of five or more; add \$2 for postage/handling to countries other than U.S.A. or Canada.

Solution Behavior of Surfactants, Theoretical and Applied Aspects, Vols. 1 and 2, edited by K.L. Mittal and E.J. Fendler, Plenum Press, Plenum Publishing Corp., 233 Spring St., New York, NY 10013, 1982, 1544 pp. total, \$85 each volume.

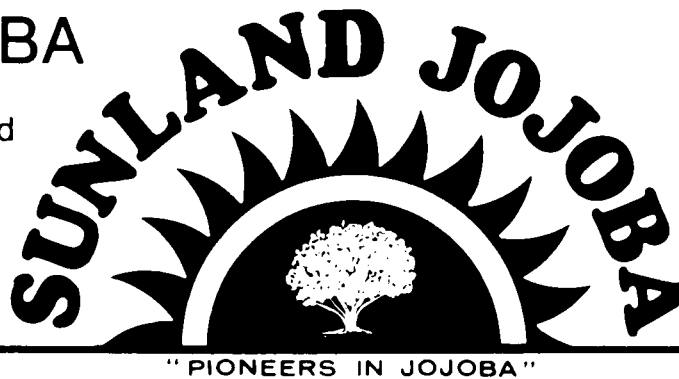
Recent Developments in Mass Spectrometry in Biochemistry, Medicine and Environmental Research, 7, Analytical Chemistry Symposia Series Vol. 7, edited by Alberto Frigerio, Elsevier Scientific Publishing Co., PO Box 211, Amsterdam, The Netherlands and 52 Vanderbilt Ave., New York, NY 10017, 1981, 360 pp., U.S. \$72.25, Df. 170. Proceedings of the 7th International Symposium on Mass Spectrometry in Biochemistry, Medicine and Environmental Research, Milan, June 16-18, 1980.

Zeolites, international journal of molecular sieves, published quarterly by Butterworth Scientific Ltd., England. Subscriptions \$208 a year, IPC Business Press Ltd., 205 East 42nd St., New York, NY 10017.

Compilation of Extra Framework Sites in Zeolites, by W.J. Mortier, Butterworth Scientific Ltd., PO Box 63, Westbury House, Bury Street, Guildford, Surrey GU2 5BH, England, 1982, £5.00, or £2.50 for Zeolites subscribers.

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