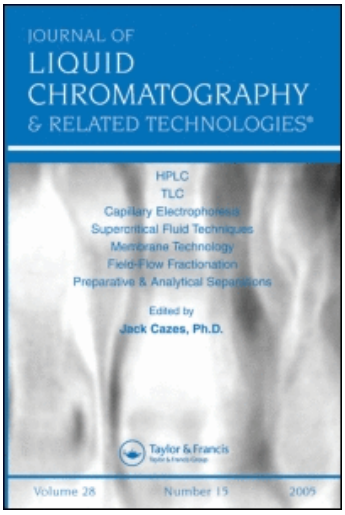

Journal of Liquid Chromatography & Related Technologies
Publication details, including instructions for authors and subscription information:
http://www.informaworld.com/smpp/title~content=t713597273

The Book Corner

To cite this Article (1993) 'The Book Corner', Journal of Liquid Chromatography & Related Technologies, 16: 17, 3877 — 3880
To link to this Article: DOI: 10.1080/10826079308019673
URL: http://dx.doi.org/10.1080/10826079308019673

JOURNAL OF LIQUID CHROMATOGRAPHY, 16(17), 3877-3880 (1993)

THE BOOK CORNER

ION EXCHANGE AND SOLVENT EXTRACTION, Edited by J. A. Marinsky and Y. Marcus, A Series of Advances, Volume II, Marcel Dekker, Inc., New York, 400 pages, 1993. Price: $195.00 (USA)

This volume of *Ion Exchange and Solvent Extraction* presents four important paths developed for the consideration and interpretation of the ion-exchange phenomenon. The book is divided into six chapters that deal with theoretical aspects and models of ion exchange by leading researchers.

Chapter 1, by Steven A. Grant and Philip Fletcher, presents an overview of the chemical thermodynamics of cation-exchange reactions, highlighting recent developments in theory and practice. Particular importance is placed on liquid-phase- and solid-phase-activity coefficient models. The major liquid-phase-activity coefficient models are reviewed, emphasizing their application to mixed electrolyte aqueous solutions. Because the development of excess Gibbs-energy-based solid-phase-activity coefficient models is in a much more rudimentary stage, their review is restricted to appropriate mathematical forms, a survey of the mathematical models by which they may be evaluated, and the statistical techniques employed to optimize the design of cation-exchange experiments.

The simple, three-parameter model, used with so much success for the correlation of ion-exchange phenomena, is reviewed in Chapter 2 by Erik Hogfeldt, who introduced it. The model, based on the Guggenheim zeroth approximation, provides an acceptable fit to all kinds of ion-exchange data through the use of a few parameters with simple physical meaning. Its only drawback is the absence of any predictive properties.

In Chapter 3, Wolfgang H. Holl, Matthias Franzreb, Jurgen Horst, and Siegfried H. Eberle provide an excellent description of the development and application of surface complexation theory to the ion-exchange phenomenon. The equilibria of representative organic ion-exchange resins described with the surface complexation model are shown to compare favorably with the experimental results.

Further insight, with respect to the surface complexation model, is provided by Garrison Sposito in Chapter 4. His description of metal-natural colloid surface reactions and their consideration by surface complexation modeling complements Chapter 3.

The Gibbs-Donnan-based analysis of ion exchange and related phenomena is presented by Jacob A. Marinsky in Chapter 5. It is claimed that with the Gibbs-Donnan approach a much more realistic picture of the physical aspects of ion-exchange phenomena is forthcoming. Insights inaccessible to the other models are inherent in the Gibbs-Donnan model.

Chapter 6, which considers the influence of humic substances on the uptake of metal ions by naturally occurring materials, is authored by James H. Ephraim and Bert Allard. Their development of this topic compares the applicability of both the Gibbs-Connan and surface complexation model in their attempts to analyze the various observations made.

This book is recommended for analytical, coordination, process separation, surface, physical, and environmental chemists; geochemists; electrochemists; radiochemists; biochemists; bio-physicists; hydrometallurgists; membrane researchers; and chemical engineers.

DRUG STEREOCHEMISTRY, Analytical Methods and Pharmacology, Second Edition, Edited by I.W. Wainer, Marcel Dekker, Inc., New York, 432 pages, 1993. Price: $165.00 (USA)

What about Stereoisomers? Not too long ago the question was considered largely theoretical, since many synthetic drugs were racemates for which there were no practical means of resolution. Efforts to prepare and isolate pure enantiomorphs were generally perceived as interesting chemical exercises of little practical pharmaceutical importance, because it was presumed that both enantiomorphs were equally active, or one of the pair was totally inert, or the enantiomorphs would spontaneously racemize in solution. Now we know better. The d- versus l- forms of amphetamine are perhaps one of our best and oldest examples of important pharmacological differences between enantiomorphs of the same agent.

In view of the current attitude toward mixtures or drug combinations, it is as difficult to justify the use of a racemate as it is to use a mixture of other analogs. The pharmaceutical industry has quickly responded to this situation by considering stereochemistry in its initial drug evaluation strategies. In fact, at the present time, a number of companies have made the decision to market only single-isomer drugs.

In light of these developments, it was felt necessary to review the content of the first edition and to update or supplement the information presented in this work. The new topics examined in this edition include: (1) enzymatic synthesis and resolution of enantiomerically pure compounds (Chapter 8); (2) toxicology consequences and implications of stereoselective biotransformations (Chapter 9); (3) stereoselective transport across epithelia (Chapter 10); and (4) assessment of bioavailability and bioequivalence of stereoisomeric drugs (Chapter 11). The chapter on stereoselective protein binding (Chapter 12) has been completely rewritten and new contributions are presented on the regulatory, industrial, and clinical aspects of stereoisomeric drugs

(Chapters 13-16). In addition, the chapters discussing stereoselective chromatographic separations (Chapters 4-6) have been revised and expanded. In this revised and expanded second edition of Drug Stereochemistry, Dr. Wainer has put together a volume that deserves careful review and will be a valuable resource to pharmaceutically oriented chemists, biologists, and clinicians who can no longer ignore the question of stereoisomerism in relation to drugs.

Table of Contents:

14. **Stereochemically Pure Drugs: An Overview**, F. Jamali, (375).

15. **Stereoisomeric Drugs in Therapeutics: Clinical Perspectives**, D. R. Abernethy and N. S. Andrawis, (385).

16. **Development of Stereoisomeric Drugs: An Industrial Perspective**, M. N. Cayen, (399).