

NEW BOOKS

edited by F. W. Quackenbush

SEALANTS, edited by Adolfas Damusis (Reinhold Publishing Corp., vi + 382 pp., 1967, \$17.50).

The contributions which the newer generation of sealants make to the modern building, transportation and sanitation industries has made a one-volume summary of the chemistry, physical properties and application of these sealants necessary. The present volume uniquely fills this need.

The book consists of 17 chapters, written by an authority in the particular field: 1. Introduction and Classification, by Adolfas Damusis; 2. Physical Aspects of Sealants in a Joint, by Egons Toms; 3. Pigments in Sealants, by Adolfas Damusis; 4. Silicone Sealants, by Robert J. Boot; 5. Urethane Sealants, by Adolfas Damusis; 6. Polysulfide Sealants, by John P. Cook; 7. Polymercaptans, by Edwin M. Smolin; 8. Chlorosulfonated Polyethylene Sealants, by Adolfas Damusis; 9. Acrylic Sealants, by Robert H. Faud; 10. Polychloroprene Sealants, by Adolfas Damusis; 11. Polychloroprene Gaskets, by Howard R. Brown; 12. Drying Oil Caulks, by Richard A. Bieneman; 13. Butyl and Related Solvent Release Sealants, by John J. Higgins; 14. Sealing Tapes, by Anthony J. Berejka; 15. Hot Poured Sealants for Concrete Pavement Joints, by G. A. McLaren and E. M. Larson; 16. Equipment for Sealant Application, by Carl B. Penn; 17. Problems in Testing of Sealants, by Charles M. Peterson. A satisfactory Index is included.

The first two chapters provide an orientation in the field. The reviewer regrets the extreme shortness of Egons Toms' contribution, but there is much food for thought in these few pages. Perhaps the one major complaint would be in the very skimpy treatment of adhesion, although the importance of this aspect of the use of sealants is recognized.

The 10 central chapters cover a wide range of sealant materials, each chapter consisting in general of a discussion of the chemistry, physical properties and applications of the type involved. The various chapters vary somewhat in the amount of detail presented, but are remarkably consistent in their treatment.

Chapter 14 discusses a particular form of sealant, and Chapter 15 a specific, and important, application. Chapters on equipment and testing round out the text.

Perhaps the most interesting section, for the members of the Society, will be the chapter on drying oil caulks, with its plea for a proper understanding of the role of the drying oil.

The book is remarkably free of misprints, although "attapulgit" is spelled three different ways in two pages.

The editor and his authors have wisely set themselves a modest target in this introduction to sealants, and have realized their aim. This is probably not the last word in this field, but it certainly is a valuable first one.

PAUL BECHER
Chemical Research Dept.
Atlas Chemical Industries, Inc.
Wilmington, Del. 19899

INTRODUCTION TO CHROMATOGRAPHY by J. M. Bobbitt, A. E. Schwarting and R. J. Gritter (Reinhold Book Corporation, New York, 160 pp., 1968, \$3.95).

The book is intended for the beginner who has an adequate basic chemistry background. Its stated purpose is "to provide a practical introduction to the more common techniques of chromatographic separation . . . without overwhelming the student with a multitude of permutations and variations." Accordingly, the authors have limited discussion to three techniques, thin-layer, column, and gas chromatography, to provide two qualitative methods (TLC

and GLC), one quantitative technique (GLC), and one preparative method (column chromatography). They entirely omit discussion of paper chromatography, expressing the view that in time it is likely to be replaced by thin-layer techniques.

In the introductory chapter there are definitions of terms, discussion of techniques and applications, and a non-mathematical discussion of theoretical concepts. Chapter 2 discusses the choice of a system for thin-layer and column chromatography with reference to polarity, adsorption and partition processes, as well as systems for gas chromatography. Chapters 3, 4 and 5 cover TLC, column chromatography and GLC in some detail.

This book presents a clear, straightforward description of how to do chromatography in the laboratory. It is illustrated with photographs and drawings which show the various steps as well as the underlying principles the beginner needs to know for successful performance of separations. Included are tables on spray reagents for the visualization of various types of compounds on thin-layer plates, illustrations of various types of column chromatography tubes, lists of adsorbants of various types (including suppliers), and a comparison of properties of GLC detectors.

The beginner can hardly go wrong with the purchase of this book; it may prove useful also to others who have some knowledge in the field of chromatography.

F. W. QUACKENBUSH
Department of Biochemistry
Purdue University
Lafayette, Ind. 47907

HANDBOOK OF THE PHYSICO-CHEMICAL PROPERTIES OF THE ELEMENTS, edited by G. V. Samsonov (Plenum Data Corporation, translated from the Russian, revised and updated; 941 + xii pages, including 84 pages of references; Russian edition 1965, American edition 1968; price not given).

This book is a compendium of physical and physico-chemical constants of the chemical elements and of information on reactions and reactivities of the chemical elements arranged in tabular form. In most cases references are given to either primary or secondary sources, the list of references numbering 2598. The data have been screened by the authors and represent the best available values in their judgment.

The book is divided into eight chapters and has 104 tables, of length varying from part of a page to 151 pages.

Chapter 1 contains information varying from the composition of the universe, through atomic structure, ionization potentials, electronic energy levels, spectral lines and radii to crystal structure, polymorphic conversions and densities. Chapter 2 includes information on nuclear properties and also the properties of the known subatomic particles. Chapter 3, contains data on mean square displacement of atoms in thermal oscillations, self-diffusion parameters and interdiffusion parameters of the elements and the mobility of ions in gases. Chapter 4 has data on superconductivity, thermoelectric properties, galvanomagnetic properties, secondary electron emission and the width of the forbidden band. Chapters 5, 6 and 7 contain the types of data predictable from the titles. Chapter 8, which takes up almost half of the total text contains a wealth of practical information on the interaction, corrosion and reactions of the elements in and with various

(Continued on page 704A)

• Fats and Oils

(Continued from page 700A)

From the harvest-time low of cash price in relation to futures, the spread tends to narrow with a high degree of regularity. This again is an economic force which functions to draw cash beans out of storage and into use.

But beware! One cannot be certain that prices will go up after harvest. Both futures and cash prices may go down. Even when this happens, however, the cash relationship to futures can be expected to narrow.

It is for this reason that farmers, and others in the grain business too, should sell futures as a hedge when storing soybeans. There is a risk that prices will go down during the storage period. When this risk is not shifted to someone else, the one who stores grain is purely speculating. (However, if prices are at or close to the local loan level offered by CCC, this risk is not so large.) Without a futures market hedge in a declining market, the one who stores beans will surely suffer a loss and have no return for storage costs. Conversely, with a hedge in an advancing market, there is forfeited the opportunity for speculative profit but there is still a return for storage costs and probably more.

The arithmetic for 1968 may look like this, assuming futures go down:

Date	Cash Transactions	Futures Transactions
Oct 17, 1968	Store Soybeans with local price 2.38	Sell May Futures @2.63
May 1, 1969	Sell Soybeans to local elevator @2.52 gain 14¢	Buy May Futures @2.58 gain 5¢
Total gain 19¢ (less 1/2¢ commission)		

But even if futures go up the results are still favorable:

Date	Cash Transactions	Futures Transactions
Oct 17, 1968	Store Soybeans with local price 2.38	Sell May futures @2.63

May 1, 1969	Sell Soybeans to local elevator @2.62 gain 24¢	Buy May futures @2.68 loss 5¢
Total gain 19¢ (less 1/2¢ commission)		

Adding the growing season hedge profit of 22 1/2¢ and the post-harvest hedge profit of 18 1/2¢ to harvest price of \$2.38 there would be a total return of \$2.79 per bushel.

Conclusions

Farmers are particularly vulnerable to adverse price changes in soybeans. There is a large investment involved. Once the decision is made to grow beans, there is no turning back.

Farmers assume a large speculative risk if they don't use the futures market to their advantage. Even though a farmer may eventually decide to put his beans in the government loan, it is still to his advantage to use the futures market.

By using the futures market a farmer can:

1. Maximize his return for anticipated production of a growing crop.
2. Expand his market participation during summer months by buying futures in an advancing price situation even though he can't expand acreage.
3. Reduce risk of price erosion while grain is in store and expect a return to cover costs of storage.
4. Decide to not grow soybeans at all if the futures market indicates a price that pays a less profitable return than an alternative crop. Then later in the season if prices show an improving tendency but it's too late to plant beans, he can buy futures and participate in the price increase as though he had grown beans.

Cash prices are usually poorest when most farmers are selling, and highest when most farmers have no beans for sale. The futures market makes it possible for them to sell the crop when prices are to their best advantage.

DAVID M. BARTHOLOMEW,
Commodity Analyst
Merrill Lynch, Pierce, Fenner & Smith
Incorporated

• New Books . . .

(Continued from page 688A)

media, including environments of each of the nonmetals. A final short section (9 pages) gives the toxicities of the elements.

The book has frequent examples of poor editing, which may make it necessary at times to recur to the original literature for confirmation of data. For example, the energy of lowest resonance for Pu-239 is given on page 221 as $0 + 0.05$ and for Pu-240 as $1.057 - 0.002$ kev instead of 0 ± 0.05 and 1.057 ± 0.002 .

There are some curious omissions. For example, the table on abundance of elements in the earth's crust (page 8) includes all the stable elements except chromium and arsenic. In the table on the energy levels of nuclei, pages 181-197, which could not, of course, pretend to be complete, there are nevertheless many blanks for spins which were well established at the time of the American edition, when this table was added. A few examples include Fe-57 for which the spin in the ground state is given as 3/2; 1/2 and no spin is given for the 0.014 Mev state, Eu-151 for which no spin is given for the 0.020 Mev state, Eu-151 for which no spin is given for the 0.084 Mev state, Sn-119 with no spin for the 0.024 Mev state and I-129 with no spin for the 0.027 Mev state. For a table which purports to give such information this is inexcusable. A vexing omission is the lack of definitions of the symbols used in many of the tables.

Nevertheless, by its very nature this cannot help being a very useful book.

Although undoubtedly much of the information given in this handbook is available in other handbooks, this is

the first instance which this reviewer has seen in which such a large variety of information concerning the chemical elements themselves has been gathered together in one place. Consequently it should be a most useful reference for anyone who has much occasion to deal with the elements in their elementary form.

A. CLIFFORD
Chemistry Department
Virginia Polytechnic Institute
Blacksburg, Va. 24061

TECHNOLOGY OF PAINTS, VARNISHES AND LACQUERS, edited by Charles C. Martens, (Reinhold Book Corporation, 744 p., 1968).

This book contains 36 chapters dealing with all important phases of coatings technology. Its editor, Charles C. Martens, is the author of five chapters and the introduction. He has joined with 37 other highly qualified contributors to produce a comprehensive, well organized treatment of coatings technology. References are more than adequate for a book of this type although a few chapters are weak in this regard. The book has good pictures, graphs, charts and illustrations, and diagrams which are helpful in understanding chemical reactions.

Technology of raw materials, formulation, production, testing and application of protective coatings comprise over half the book. Performance evaluation is given for specific coatings for trade sales, industrial usage, and maintenance. Several related topics such as color science, aerosols and safety are discussed.

This book should be useful to all technical personnel working in the coatings field, formulators of coatings, raw

(Continued on page 732A)

• *New Books . . .*

(Continued from page 704A)

material suppliers and the users of coatings. Chemistry and physics relevant to paint technology are also relevant to plastics, rubber, inks and adhesives. For this reason, this book would be useful to many people outside the paint industry.

I would particularly recommend this book to chemists, engineers and technicians entering the coatings field. It serves as a convenient and comprehensive reference to coatings technology. I would also recommend the book to non-technical people in production sales or management who have little or no technical background. Although much

of the book is science oriented, there remains much of value for the non-technical person.

Any member of the AOCS working in coatings or related areas will find this book a useful addition to his library. It is thorough, up to date, and certainly contains a wealth of useful information.

ROBERT M. PIERCE
Minnesota Linseed Oil Co.
Minneapolis, Minn. 55421

PRACTICAL EMULSIONS, Vol. 2, edited by H. Bennett, Jack L. Bishop, Jr., and Max F. Wulfinghoff. (Chemical Publishing Co., Inc., New York, 204 p., 1968, \$13.00).

This brief, compact book presents practical, useful formulations for preparing a wide variety of emulsions. Whereas Vol. 1 has "attempted to convey a general impression of the science of the formulation and manufacture of emulsions," this second volume is a compilation of basic formulations of many types of emulsions.

Each chapter presents a broad application area in the emulsion field, subclassified in a numerical sequence of formulations and procedures. The categories include agricultural, bituminous, cleaning, cosmetic, gasoline, food, leather, paper treatment, medical, paint, polishes, resin, rubber and textile emulsions, foams and emulsion polymerization, and a chapter on cutting, soluble and miscible oils. There are seven appendices including a list of emulsifying agents and their suppliers.

The basic formulations included in this book will be useful to all members of the Society to serve as illustrations of the preparation of most types of emulsions and provide starting points for making specific emulsions for specialized applications. Many of the formulations are taken from the senior author's Chemical Formulary, and the main references cited in the bibliographies in each chapter refer to the earlier formulary.

C. W. HOERR and J. T. KOMP
Glidden-Durkee, Division of SCM Corp.
Chicago, Illinois 60647

Classified

Advertising

**FOODS R & D MANAGER
BRAZIL**

Large, long established, diversified American corporation seeks experienced food Research and Development Manager for assignment in Sao Paulo, Brazil, to direct and achieve timely research and development leading to new products and new processes and/or improved products and processes to assure the establishment and maintenance for the quality standards of their manufacture. Responsibility also includes environmental products testing and initial consumer testing programs.

Candidates should have technical degrees in Chemistry or Chemical Engineering with a minimum of 10 years experience in food development. Portuguese language ability will be helpful. Excellent salary plus expatriate benefits.

Send confidential, detailed, resume, including general salary requirements to: Personnel Department, Anderson, Clayton & Co., P.O. Box 2538, Houston, Tex. 77001. (An equal opportunity employer.)

*German manufacturer for
chemical specialties seeks*

**cooperation or licensing
to produce
industrial auxiliaries
and chemical specialties.**

We have an established sales organization
operating throughout Europe.

**Suddeutsches
Emulsionswerk Wüst
& Kost**

D - 6800 Mannheim-24, Rhenaniastr. 46
Western Germany.

**SURFACTANT
APPLICATIONS
& EVALUATION
CHEMIST**

Ethyl Corporation's Research and Development Department at Baton Rouge seeks a chemist for a responsible position developing and evaluating surfactant products. The position requires a minimum of a B.S. degree, strong background in physical chemistry, and experience in the areas of household detergents and related products.

Experience should be in research, development, applications, and evaluations of surfactant products, including background in surfactant preparations, formulations and evaluations.

Ethyl offers excellent benefits and salary commensurate with training and experience.

Submit resume in confidence to:
A. J. Robichaux



ETHYL CORPORATION

P.O. Box 341
Baton Rouge, La. 70821

An Equal Opportunity Employer