

*Recent Wiley Books for successful chemistry . . .*

## CHEMICAL PROCESS PRINCIPLES

Part I—Material and Energy Balances, 2nd Edition

By Olaf A. Hougen, *University of Wisconsin*; Kenneth M. Watson, *The Pure Oil Company*; and Roland A. Ragatz, *University of Wisconsin*. This key reference for solving industrial process problems has been revised and expanded to give a comprehensive, modern treatment of energy balances of chemical processes. Latest physical and chemical constants are included in a wide variety of tables. 1954. 525 pages. *Illus.* \$8.50.

## SUCCESSFUL COMMERCIAL CHEMICAL DEVELOPMENT

*Prepared by the Commercial Chemical Development Association. Editor-in-Chief, H. M. Corley, Armour and Company.* "It is a remarkable compilation of the aggressive thinking and the experience of more than a hundred . . . leaders and pioneers in the commercial development of chemical products. . . contains a wealth of information and a variety of points of view seldom found between the covers of a single volume."—D. H. Killeffer, F.A.I.C., in *The Chemist*. 1954. 374 pages. \$7.75.

## The TECHNOLOGY of SOLVENTS and PLASTICIZERS

By Arthur K. Doolittle, *Carbide and Carbon Chemicals Company*. "Any laboratory or library devoted to the interests of those who specialize in organic coatings, inks, adhesives, plastics or synthetic fibers will find this work to be an invaluable source of information. It would be hard to know where else to turn in order to obtain such complete data presented in such a thorough manner on such a variety of solvents and plasticizers."—*Organic Finishing*. 1954. 1056 pages. 461 *illus.* \$18.50.

## SYNTHETIC RUBBER

*Editor-in-Chief, G. S. Whitby, University of Akron.* Prepared under the auspices of the American Chemical Society, this new work offers a first-hand account of the subject, phase by phase, by 37 top-ranking industrial technologists. As well as documenting what has been accomplished so far, it indicates the directions that new synthetics will take. 1954. 1044 pages. *Illus.* \$18.00.

## ORGANIC COATING TECHNOLOGY

Vol. I: Oils, Resins, Varnishes and Polymers

By Henry Fleming Payne, *American Cyanamid Company and Polytechnic Institute of Brooklyn*. A. C. Elm, in *The Octagon*, writes: "It is refreshing to find in this book a new approach to the treatment of an old subject. . . This book is what it promises in the preface, a compact treatment of current theory and practice of paint vehicle technology, and is highly recommended for careful study by every coatings technologist." 1954. 674 pages. *Illus.* \$12.00

## ADHESION and ADHESIVES: Fundamentals and Practice

*Papers read at a Conference held at the University of London (edited by F. Clark, The Society of Chemical Industry), and at a Symposium held at the Case Institute of Technology (edited by John E. Rutzler, Jr., and Robert L. Savage).* 1954. 229 pages. *Illus.* \$9.75.

Send for your on-approval copies today.

**JOHN WILEY & SONS, Inc.**

440 Fourth Ave.

New York 16, N. Y.

# BOOKS

Chemical Process Principles-Part 1, Material and Energy Balances. O. A. Hougen, K. M. Watson, and R. A. Ragatz. Second Edition. John Wiley & Sons, Inc., New York (1954). 525 pages. \$8.50.

Professor Ragatz has collaborated with the original authors of the *Chemical Process Principles* series to revise Part 1, "Material and Energy Balances." While retaining the many virtues of the original edition, the authors have increased its utility by the addition of discussions on stage-wise extraction, ternary equilibria, and time lag in stirred vessels, and in recognition of the new era R. G. Taecker has contributed a brief section on the thermochemistry of nuclear reactions. Further, two new chapters are found in this edition, one devoted to mathematical procedures and conversion of units, the other to absorption. New methods of estimating physical properties and the latest thermal data are included.

Although the law of corresponding states and the concept of reduced properties are briefly treated in a prelude to the section on methods of estimated critical properties, the generalized compressibility-factor chart is not discussed. Thus the authors proceed from a treatment of ideal-gas behavior directly to reduced and critical properties, including a method of estimating critical compressibility factor, without reference to the most common application of the law of corresponding states. Continuity would seem to be sacrificed here. For example, an apparently promising method of predicting latent heats of vaporization is later in the book presented in terms of reduced properties and gas-liquid compressibility factors, the significance and limitations of which are lost to the student in his ignorance of the generalized compressibility chart. The merits of these chapters for reference purposes are obvious; however, it is the reviewer's experience that the pedagogic value of these portions of the text would have been enhanced by the early introduction of the generalized Z chart. The semimythical character of the ideal-gas concept would thus have been impressed upon the student's mind, and the value and intrinsic limitations of the law of corresponding states could have been made apparent in the light of the authors' discussion of the Lennard-Jones model and molecular polarity. The student must learn as early as possible that chemical engineering tools are not *de fide* truths.

Viewed in its entirety, this edition is a good revision of a good textbook. The authors are to be commended.

JAMES J. CARBERRY  
YALE UNIVERSITY