BOOK REVIEWS

Fine Particle Measurement

Clyde Orr, Jr., and *J. M. DallaValle*, Georgia Institute of Technology. The Macmillian Co., New York, 1959. xiv + 353 pp. Figs. and tables. 15 × 21.5 cm. $10.50.

This book is an expansion of one segment of "Micromeritics," the entire subject of fine particle technology, first written by DallaValle in 1943. As the authors point out, the size and surface of particles critically influence so many technological phenomena from the setting time of cement and the color, gloss, and weathering of paints to the taste of many foods and the effectiveness of adsorbents and catalysts. Anyone wishing to determine the size, surface area, or pore characteristics of fine particles will find this to be an excellent reference book to help to decide which approach to take; it will also provide a good source book for courses in colloid and surface chemistry.

For particle size determination, microscopy, sieving, sedimentation, inertial, and radiation scattering techniques are described. For surface area determination, permeametry, gas adsorption, liquid phase adsorption, and a variety of miscellaneous techniques are given. Techniques for pore size and pore-size distribution form the concluding chapter. Descriptions of apparatus and of calculations for the prominent methods are provided. A useful appendix which gives comparisons of results by various methods and an extensive bibliography complete the survey.

The experimentalist would be further aided if dimensions of apparatus and sizes of parts were given in cases where he may have to construct his own apparatus. This is the case, for example, for the BET apparatus on page 176; the capillary nature of the "dead space" is also not indicated. The writing and typography are free of errors such as the missing coefficient in equation 7.5 on page 168. And seldom is a critical analysis of the technique avoided as it is in the case of the H-J Absolute Method (pp. 236); cracks and crevices in the particles or interparticle capillaries almost invariably affect the results so that the method is misnamed "absolute."

Nevertheless, the book fulfills its purpose quite well. For an introduction to the theory of fine particle measurment and for a description of the methods (over 70) and apparatus, no other comprehensive reference is now available.

A. C. Zettlemoyer
Lehigh University
Bethlehem, Pennsylvania

Epoxy Resins

Irving Skeist, Consultant, Skeist & Schwarz Laboratories, Inc., Newark, N. J. Reinhold Publishing Corp., New York, 1958. xii + 293 pp. 13.5 × 19 cm. $5.50.

The epoxy resins, a class of versatile, thermosetting resins, are thoroughly considered from the point of view of their engineering properties in this eighth volume of the Reinhold Plastics Applications Series. After a brief history of the development of the epoxy resins and a short discussion of the chemistry involved in their formation, the technical aspects of their production and use are presented in ample detail. Their uses as casting and potting compounds, adhesives, plasticizers, and coatings are covered. Three hundred references are given to the original literature.

The book is oriented toward the engineering and development field. In education it would be most useful in courses in chemical and mechanical engineering. The completeness of the coverage should make this a valuable book for the technical man.

Thomas E. Ferington
The College of Wooster
Wooster, Ohio