

BOOK REVIEW

"Diffusion in Polymers" edited by J. Crank and G. S. Park, Academic Press, London and New York, 1968; 452 pg.

The editors of this book have brought together eleven outstanding investigators who have ably summarized a very large body of information available on diffusion and permeation in polymers in ten chapters. These chapters and authors are: 1) Methods of Measurement by J. Crank and G. S. Park, 2) Simple Gases by V. Stannett, 3) Organic Vapors above the Glass Transition Temperature by H. Fujita, 4) Free Volume and Other Theories by C. A. Kumins and T. K. Kwei, 5) The Glassy State and Slow Process Anomalies by G. S. Park, 6) Diffusion and Permeation in Heterogeneous Media by R. M. Barrer, 7) The Solution Process by K. Ueberreiter, 8) Water in Polymers by J. A. Barrie, 9) Kinetics of Dyeing by R. H. Peters, and 10) Transport in Ion-exchange Polymers by P. Meares. The emphasis of all the chapters is on the fundamental phenomena, their measurement, and on the basic theoretical approaches from which the data are currently correlated. While the book deals predominantly with synthetic polymers, it covers also measurements on certain natural polymers of industrial importance.

The editors are to be congratulated in producing a book which appears much more homogeneous than is usual of collections of articles written by authorities with diverse interests and view-points. A serious omission is the absence of any representative data or discussion of the solubility of organic vapors in polymers. A materials index augments the subject and author indices. This is an important book for this field of scientific investigation being the only comprehensive reference work which carries on for polymers the high standards set by R. M. Barrer's "Diffusion in and through Solids" (Cambridge University Press, London, 1941). The format of the book is pleasing.

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