

The Science and Technology of Polymer Films. Vol. 1, Orville J. Sweeting, Editor. Interscience, New York, 1968. XII + 887 pp. \$35.00.

Volume 1 of the two-volume series is comprised of chapters contributed by scientific authorities versed in the science and technology of thin self-supported polymer films of importance to the packaging industry. The book is designed for presentation in the style of an Encyclopedia, and therefore the subject matter is generally presented in a concise and realistic appraisal of the state-of-the-art. The book covers molecular constitution, synthesis, mechanical behavior, manufacturing methods, physical property measurements, and the analysis of polymer films. The discussions covering the economic considerations, trends, requirements for effective packaging film, and procedures for establishing safety of polymers for contact with foods tries to also capture the interest of management.

The portions of the book devoted to synthetic organic polymers as film formers appear to be very concise and of limited value. However, the extensive list of references in this particular section of the book does offer the reader an opportunity to become further acquainted with the synthesis of organic polymers. The chapter on inorganic polymer films does not fit the scope of this volume since the authors point out that, at the present time, inorganic polymers are unsuitable for film applications. The authors justify this chapter in the following statement, "Inorganic polymers might well be considered in any long-range research planning because of their variety and novelty, and because unusual properties are to be expected."

The chapters on melt rheology, polymer deformation, film orientation, film friction, melt casting, and coating technologies are presented in depth and contribute to the overall rationale for the successful commercial preparation of packaging films. The sections devoted to the analytical chemistry of films (natural and synthetic) and the measurement of physical properties of films not only describe in detail the evaluation methods and calculations but also offer a critical evaluation of available analytical methods.

This treatise has succeeded in bringing together the chemistry, physics, and engineering of packaging films and therefore is recommended as a reference book for scientists and engineers concerned with research, development, and manufacturing of polymer films.

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