

*Treatise on Adhesion and Adhesives, Volume 2, Materials*

Edited by R. L. PATRICK. Marcel Dekker: New York, 1969. 6 in. × 9 in. 554 pp. \$32.50

THE second volume in this series sets out to provide an authoritative review of the properties of adhesive materials. R. L. PATRICK, the editor, has achieved this objective and has produced a valuable reference work likely to be much used. It is primarily a collection of experimental data and is complementary to Volume I of the series which deals with the theory of adhesion. The third and final volume of the series is planned to provide an account of the technology of adhesion.

This division of the subject into three parts is, of course, to some extent artificial and in Volume II there is appreciable reference both to theoretical and technological matters. The book is in fact a largely self-contained treatise with its main emphasis on materials properties and chemical structure.

The field of adhesives is covered comprehensively. After an introduction by the editor there are two chapters on epoxides and thermosetting adhesives. There is considerable overlap of content in these two chapters and although, as the editor implies, a book of this type almost inevitably contains some duplication it does appear to be excessive here. The next three chapters deal with elastomeric and pressure-sensitive adhesives and fibre adhesion. Then follow chapters on soldering, brazing and welding and glass/resin adhesion in filament-wound structures. These topics illustrate the wide spectrum covered by the book; it is of wider interest than might be expected from its title. The last three chapter headings are high-temperature adhesion, thermoplastic adhesives and preparation of ultra-clean substrate surfaces.

It is difficult for the reviewer faced by a diverse collection of topics to give a balanced criticism with regard to the book's technical merit. His impression is, however, quite clear that the editor has assembled a team of expert contributors who have provided a set of authoritative reviews of the materials listed. As always in such a work the quality of the treatments is somewhat variable and in particular the reviewer feels that the chapter on thermoplastic adhesives should be read with caution. It does contain several statements which may be misleading by being oversimplifications.

To summarize, the book is an excellent compilation of information on a wide range of adhesive materials which is strongly recommended (despite its rather high price) to scientists and technologists working in the field of composites generally.

E. R. HOWELLS

*The Classifying of High Polymers*

OTTMAR LEUCHS (edited by G. M. Kline). Butterworths: London, 1969. 6 in. × 9½ in. pp. 491-702. 60s

THIS report was prepared under the auspices of the IUPAC, and the same text also appears as *Pure and Applied Chemistry*, Vol. 16, No. 4 (1968). It is an examination of the principles to be identified and employed in preparing an internationally useful classification for polymers. It is a remarkable effort. No less than 133 different systems of grouping polymers are compared: these are of all types and applications, and vary from the purely chemical classifications, from STAUDINGER to the present day, through systems based on the performance of polymers in particular applications (such as phenolic resins and rubbers in the automobile industry), to purely commercial descriptions (nevertheless of considerable importance) used in Customs classifications. Different national patent classifications are also mentioned, in a carefully arranged system of systems, which concludes with a thoughtful survey of the many considerations involved in establishing a classification of polymers, including the particularly difficult problem of copolymers. No final system is proposed.

The book is in three parts, of which those on the general principles and on the comparison of systems are printed in parallel English and German texts, whilst the middle section, giving the systems themselves, appears only in German. In spite of this rather curious arrangement, the book is coherent, informative, and easy to use.

C. A. FINCH