

REVIEWS

Emulsions and Emulsion Technology, Part I (Volume 6 in Surfactant Science Series). Edited by KENNETH J. LISSANT. Marcel Dekker, 305 E. 45th St., New York, NY 10017, 1974. 440 pp. 15.5 × 23 cm. Price \$39.50.

The purpose of the book is to attempt to bring the status of emulsion technology up to date and to introduce the concept of emulsions to a wider group of people.

The first three chapters are introductory. Chapter 1 is entitled Basic Theory (by K. J. Lissant) and is unique in that it deliberately avoids most of the classical mathematical derivations and concentrates on a geometrical approach. This approach was chosen since many emulsion systems behave as though their performance properties were more dependent on their physical and topological configuration than on the chemical properties of their constituents. Thus, emulsions are discussed with regard to low-, medium-, and high-internal-phase-ratio type classifications rather than to classify them according to type of emulsifier employed.

Chapter 2 is entitled Making and Breaking Emulsions (by K. J. Lissant). This chapter also uses the geometric approach and is geared to answer the following questions:

1. Is an emulsion really needed, or would a solution or suspension do a better job?
2. If an emulsion is required, what type would be most suitable?
3. What emulsifiers and what equipment should be used?
4. When dealing with an undesirable emulsion, what techniques should be used for breaking such emulsions?

Chapter 3 is entitled Microemulsions (by L. M. Prince). This still controversial topic is treated well by Prince. Both theoretical and practical aspects are discussed and although some may disagree with the theories presented, it provides a good working basis for practical application.

A reading of the first three chapters should provide enough theoretical basis for the remaining five chapters which deal with applications in specialized areas of interest. These chapters are entitled Agricultural Emulsions (by P. L. Lindner), Food Emulsions (by M. W. Lynch and W. C. Griffin), Medicinal Emulsions (by B. A. Mulley), Emulsion Paints (by G. Allyn), and Asphalt Emulsions (by R. L. Ferm).

Each of these chapters is well written and extensively referenced. While the terminology varies slightly in each area, this does not present a major problem. Part II (not yet available) will deal with additional specialized areas of interest. These include Emulsion Polymerization, Emulsions in the Paper Making Industry, Emulsions in Printing and the Graphic Arts, Hydraulic Fluid Emulsions, and Emulsions in the Cosmetic Industry.

In summary, the book is recommended to all those in industry who must have a working knowledge of emulsions in any of the specialized areas mentioned. Those who want a more fundamental, theoretical basis would be well off first purchasing a text geared to this need such as "Emulsions, Theory and Practice" by Paul Becher.

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Synthetic Methods of Organic Chemistry, Volume 28, Yearbook 1974. WILLIAM THEILHEIMER, Editor. S. Karger AG, Medical and Scientific Publishers, Arnold-Böcklin-Strasse 25, CH-4011 Basel, Switzerland, 1974. xx + 652 pp. (Albert J. Phiebig, Inc., U.S. Representative of S. Karger, P.O. Box 352, White Plains, NY 10602) 16 × 23 cm. Price \$178.75.

Volume 28 of *Synthetic Methods of Organic Chemistry* is the latest volume of a multivolume work which has probably by this time become a standard reference in the field of organic synthesis.

The main portion of the work is a 476-page section devoted to abstracts of descriptions of the methods for the synthesis of specific compounds. The abstracts are of articles published in selected major journals, generally during 1971–1973. Accompanying almost every abstract is a brief structural representation depicting the starting material(s) and the product of the reaction sequence. This affords a rapid visualization of the structural change achieved by the synthetic method. The abstracts are highly but effectively condensed. They present the principal points of information (reactants, solvents, yield, etc.) of the method which allow one to judge if that particular synthetic method may or may not be helpful in the formulation of his or her own particular synthetic procedures. If a method appears to have utility, the details can then be found by consulting the original publication for which the literature citation is given after each abstract.

The method of classification of the abstracts is highly systematized. In brief, the major divisions are decided by the bonds formed between elements in the course of the reaction. These divisions are subdivided by the four ways by which the bonds are considered to be formed (addition, rearrangement, exchange, and elimination). A further subdivision is then made based upon the reagent used in the reaction.

The classification system and the abbreviations and symbols it employs, although logical, are by necessity somewhat arbitrary, and so the classification scheme requires some study and practice for mastery and easy usage. If one wishes to avoid using the classification system to find an abstract, he or she may proceed alternatively via the extensive subject index (pages 477–612). Here, classes of compounds, methods, and reagents are alphabetically listed along with references to where the appropriate abstracts are found in the main portion of the work. The subject index is cumulative for volumes 26, 27, and 28.

The cross-referencing of this nature contributes greatly to the value of the work by facilitating the location of the abstracts. Also, the abstracts themselves appear to represent a good cross-section of specific organic synthetic conversions, although specialists in certain areas of synthesis might possibly detect that their area of specialization is not treated as thoroughly as they might wish.

Synthetic Methods of Organic Chemistry impresses, then, as a work of considerable value to the medicinal chemist engaged in the synthesis of potentially bioactive compounds. Its value lies principally in the fact that it affords a quick entry into the literature of organic synthesis, especially when one wants to find a specific method for the synthesis of a specific compound. The cost probably precludes its inclusion in a personal library, but it at least ought to be, in this reviewer's opinion, readily accessible in an institutional or company library.

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