

# Publications

## Book reviews

**Amphoteric Surfactants**, edited by Bernard R. Bluestein and Clifford L. Hilton (Marcel Dekker Inc., New York and Basel, 270 Madison Ave., New York, NY 10016, 1982, 343 pp., \$55).

This book is volume 12 of the Marcel Dekker Surfactant Science Series. It contains seven chapters written by various experts in the field.

Chapter I on amphoteric imidazoline derivatives by Arvid Christiansen cites 213 references and accordingly contains a wealth of information on the subject. The author discusses the organic chemistry quite thoroughly including the various tautomeric structures of imidazolines and hydrolysis products. However, one has to read between the lines to find that the bulk of the commercial "imidazoline derivatives" are, for the most part, linear compounds rather than imidazolines. The section on analyses is brief because of lack of published information. Applications in cosmetic products, cleaning agents, fabric softeners and textile processing aids, antistatic agents, metal-treating and finishing agents and miscellaneous applications are well and thoroughly discussed. The lack of detailed discussion on physical and biological properties should also be noted.

Chapter II on surface-active betaines by Robert Ernst and Eugene J. Miller Jr. is the most comprehensive and longest chapter, comprising almost one third of the book. It covers the literature very well with over 230 references, but there is some overlap with the preceding as well as subsequent chapters. It is well organized into subchapters on nomenclature, preparative methods, analytical methods, physical properties, applications, biological properties and biodegradation. The material is thoroughly discussed and presented clearly. The spectroscopic and other analytical data will be welcomed by many workers in the field.

Chapter III on amino acid-type amphoteric containing carboxyl, sulfonate, or sulfate anion by William Rosenblatt contains the following sections: amino carboxylic acids, sulfonic acid ampholytes containing the sulfate anion, physical properties and applications. This chapter covers a great variety of surfactant types, only a few of which have ever been commercialized. The author cites 160 references, and discusses them in sufficient detail. While overlap with previous chapters was unavoidable the author wisely did not go into detail in imidazoline derivatives or sulfobetaines, and his presentation by and large is concise and clear.

Chapter IV on lecithin and related phosphatides was authored by Richard D. Cowell, Daniel R. Sullivan, and Bernard F. Szuhaj and discusses composition and physical properties, chemical properties, production, lecithin analysis, applications, commercial sources of lecithin and synthetic phosphatides. This chapter deals with the more practical aspects of phospholipids and 100 references are cited. Since there is voluminous literature on the analysis and biochemistry of phospholipids the reader is referred to Holman's series on "Progress in the Chemistry of Fats and

Other Lipids" and to that by Paoletti and Kritchevsky on "Advances in Lipid Research."

Chapter V on macromolecules as amphoteric surfactants by Richard D. Cowell and B.R. Bluestein covers protein based amphoteric surfactants and oligomeric amphoteric surfactants (67 references). This short chapter represents a useful summary about this somewhat obscure class of surfactants.

Chapter VI on miscellaneous polar surfactants by B.R. Bluestein and Robert Goldsmith briefly summarizes chemical structures of amphoteric that do not fit the previous five chapters.

Chapter VII on analysis and testing of amphoteric surfactants by Clifford L. Hilton and Brij L. Kapur is a very brief summary of analytical methodology, etc., developed for amphoteric surfactants. To a large extent it covers reference material discussed in greater detail in previous chapters. Perhaps it would have been wiser if the editors had deleted the analytical and spectroscopic sections from the previous chapters and amalgamated them into one comprehensive one on analysis.

By and large, the book is well written and contains few typographical errors, such as missing bonds in some structural formulas. A minor flaw is the citation of industrial "Technical Bulletins" which cannot be found in libraries and are usually unavailable from the chemical manufacturers after their supplies have been exhausted. This is a unique book insofar as it is the first compilation of information on amphoteric ever to be published. Since the interest in amphoteric appears to be growing, this book is highly recommended to chemists working in the surfactant field in industry or academia.

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## Calendar

### AOCS NATIONAL MEETINGS

Annual Meeting, 1983: May 8-12, Chicago Marriott, Chicago, IL.

### 1984

"Surfactants in Our World—Today and Tomorrow," CESIO Surfactant World Conference, May 6-10, 1984, Munich, Germany. Contact: CESIO, Avenue Louise 250, Boite 102, 1050 Brussels, Belgium.