

Book Reviews

POLISHES. By A. DAVIDSOHN AND B. M. MILWEDSKY. Pp. 205 + xiv. London: Leonard Hill Books Ltd. 4th Edition, 1968. Price 70s.

The expansion in the field of synthetic detergents since the previous edition of this work in 1956 has resulted in the authors justifiably removing synthetic detergents to a separate volume and devoting this volume entirely to polishes.

The book provides a good general background to the subject dealing with the raw materials, manufacturing processes and suggesting a selection of starting formulation for specific polish types.

The authors treat the main subject in reasonable depth, providing the technologists within the polish industry with a useful background and chapter references to more detailed work in the field. The peripheral subjects treated in the book such as the general properties of solvents, inflammability and physiological effects, are dismissed in a few lines and perhaps would be better omitted altogether or specific works on the subject referred to.

The chapters dealing with individual polishes discuss formulations in "parts" rather than percentages and this makes comparison between formulae a mathematical exercise for the reader; temperatures are quoted at one time in degrees Centigrade and at another in degrees Fahrenheit, but the former is a habit of the industry rather than a fault of the book, and the latter inevitable during the transition to metric units.

Some of the polish formulae in the book are accompanied by subjective comments from the authors. This is most useful, for it is the long experience of the authors that is valued by the reader more than a mere collection of formulae.

A short final chapter deals with simple analytical tests "for detecting gross adulterations" of the waxes, solvents and other raw materials of the industry. Sophisticated analytical techniques are not included nor any analytical methods or means of assessing the compounded polishes.

ALAN BERMAN.

SYNTHETIC DETERGENTS. By A. DAVIDSOHN AND B. M. MILWEDSKY. Pp. 231 + xv. London: Leonard Hill Books Ltd. 4th Edition, 1967. Price 70s.

The first predecessor of this book was published in 1938 as "Polishes", by 1956 it had grown to "Polishes and Cleaning" and it is now presented in two volumes, as "Polishes" and "Synthetic Detergents". It is the latter volume which is here reviewed.

This is essentially a book written by practical men for practical men and is intended in the main for the use of small firms who manufacture detergents.

To this end, two of the seven chapters, entitled "Synthesis of detergents" and "Manufacture of finished detergents" comprise one half of the book, which also contains 35 tables mostly devoted to the physical and chemical properties of chemicals such as sulphuric acid, sodium silicates, fatty alcohols, etc., which are important in this context.

Chapter 1 entitled *Development of the detergent industry* gives a short account of the progress from the most commonly-used detergent, alkyl benzene sulphonate to the currently-used "biologically softer varieties", together with some mention of the two other most important detergent constituents, C.M.C. and condensed phosphates. Here, as elsewhere in the book some errors need attention and sulphonates and sulphates, sulphonation and sulphation seem to become inextricably intermixed which could be very confusing for the type of reader specifically catered for.

Chapter 2, *Principal groups of synthetic detergents* is another short chapter which touches briefly on seven types of anionic detergent and four types of non-ionics but strangely includes the important alkyl phenol ethylene oxide condensates in a section headed "condensate with a long-chain (fatty) alcohol". Also mentioned are alkanolamides (still called alkylolamides), amine oxides and amphoteric compounds. The formulae given are sometimes not clear and occasionally misleading, e.g. p. 15 "the sulphate bond $-C-S-O_2$ ".

Chapter 3, *Inorganic components of detergents and other builders* is a longer chapter of 37 pages. Whilst this is a useful exposition, many of the views expressed seem to be debatable.

For example, on p. 31 the amount of condensed phosphate necessary to prevent precipitation of unit weight of metallic soap is not a particularly helpful presentation as the quantity needed relates to the hardness salts in solution and not the soap. In any case the figures quoted do illustrate the lack of efficacy of condensed phosphates in preventing precipitation of the extremely insoluble "lime soaps".

Again on p. 34 it is stated "Silicates soften water by formation of precipitates which can be easily rinsed away by the water, and do not tend to deposit . . .". This statement is open to some question, and in the reviewer's experience, when washing clothes or crockery, etc., in hard water the use of silicates should be avoided or kept to a minimum as silicate scales are hard, adhesive and difficult to remove. It is of course appreciated that silicates are often necessary to prevent corrosion.

Chapters 4 and 5, *Synthesis of detergents and Manufacture of finished detergents* occupy 103 pages and are of specialised interest to detergent manufacturers.

Chapter 6, *Application and formulation of detergents* gives 47 formulas for use, which can serve as an introduction to practical formulation. Here again caution would seem advisable.

For example Formula 4, Hand-washing powder, embodies 15 per cent. anhydrous sodium metasilicate, which would indicate that insufficient thought has been given to the users' hands.

As a further example, Formula 12, Heavy duty liquid detergent, contains 5 per cent. EDTA, but consideration of corrosion problems seems to be lacking.

Chapter 7, *Analytical Methods* is a short chapter, giving a scheme for quick approximate analysis of certain constituents and is of use for the control of routine production when dealing with detergents of known composition.

This is a useful introductory book for the analyst who wishes to obtain a general picture of detergents and what is likely to be present in the various packets and containers which arrive on the laboratory bench for assessment and analysis. It is no substitute for long periods of hard work in the laboratory, the kitchen and the laundry.

D. BURNS.

RADIO-CHEMICAL AND RADIO-ANALYTICAL LETTERS. Publishers: Elsevier Sequoia S.A. Lausanne, Switzerland.

This new publication which appears to be a quarterly (subscription £21 10s. per annum) claims to be able to publish short papers in only six weeks from submission by the author. Whether this speed is justified by urgency is debatable. The first issue contains papers of practical application on such topics as the rapid determination of iron in lubricating oils, phosphorus and nitrogen in herbage flour and arsenic in human nail and hair, as well as papers of more purely academic interest. The main advantage of the methods is that they are normally non-destructive and sometimes more rapid. This may be a useful source of "soft ware" if one is equipped with the "hard ware".

F. A. LYNE.