

Book reviews

Methods for the Oxidation of Organic Compounds: Alkanes, Alkenes, Alkynes, and Arenes, by ALAN H. HAINES, Academic Press, London, 1985, xix + 388 pp., £72.50 (U.K. only), \$83.00.

Although a sizeable portion of this book is of little direct interest to synthetic carbohydrate chemists, this parochial view is hard to sustain in the light of the vast amount of useful information to be gleaned throughout its pages. Of particular interest to carbohydrate chemists, however, is the chapter on the oxidation of alkenes, which, among others, covers methods, old and new, for epoxidation and vicinal hydroxylation. The intention is to provide practical information on each topic, and the book is full of preparations, practical hints, and useful examples. Mechanistic aspects of the reactions presented are kept to the bare essentials.

The organisation of the material sets it apart from other practical books on synthetic methods, such as "Organic Syntheses" and "Reagents for Organic Synthesis", since each chapter deals with the oxidation of a different class of substrate, and the sections within each chapter focus on the formation of a particular type of compound or group from that substrate. For example, the section on the formation of 1,2-epoxides from alkenes covers the use of various peroxy acids, hydrogen peroxide with a tungsten-based catalyst, alkyl hydroperoxides with vanadium- and molybdenum-based catalysts, asymmetric epoxidation catalysed by metals, and the epoxidation of electrophilic alkenes with alkaline hydrogen peroxide or alkaline *tert*-butyl hydroperoxide. A typical experimental procedure is given for most reagents, and many more informative examples appear in tables in an appendix that constitutes a little under half of the book.

This is a general laboratory text on the oxidation of hydrocarbons (a companion volume will deal with the oxidation of alcohols and related compounds) that should be housed in every chemical library. Or rather it shouldn't. Its real home is in the laboratory, where it would be of great help to users, especially research students, in assessing which experimental procedure is best suited to their needs. My own research students have already laid claim to my review copy. Fortunately, the book is bound robustly enough to withstand the frequent use it merits. A detailed "Contents" and an index of compounds and methods allow easy access to the text, which is clear and concise.

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