

Book reviews

Synthesis of Acetylenes, Allenes and Cumulenes. A Laboratory Manual; by L. Brandsma and H.D. Verkruisje, Elsevier Scientific Publishing Company, Amsterdam — Oxford — New York, 1981, ix + 276 pages, U.S. \$70.25; Dfl. 165.00.

This book presents more than 200 detailed experimental procedures for the preparation of a wide range of acetylenes, allenes, and cumulenes. It represents a remarkable achievement since all the procedures have been checked or developed by the authors; all the main established methods are exemplified, and some new methods described. For each compound the best and most economic method for use on the 0.1–0.2 molar scale is selected. Good indexes by formula and compound type are included. A final section by R.H.A.M. Janssen, R.J.J.Ch. Lousberg and M.J.A. de Bie lists NMR parameters for allenes.

Established workers and beginners in the field will benefit greatly from having this volume available in the laboratory. But it may be of even greater value to those who only occasionally need to make acetylenes, allenes, or cumulenes.

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COLIN EABORN

Gmelin Handbook of Inorganic Chemistry. 8th Edition. Organoantimony Compounds. Part 2; by M. Wieber, Springer Verlag, Berlin-Heidelberg - New York, 1981 xi + 182 pages. DM 512.

This second volume on organoantimony compounds is concerned very predominantly with trivalent antimony compounds of the types R_2SbX and $RSbX_2$, in which R is an organic group attached through an Sb—C bond. Usually X is an inorganic group, or an organic group bonded through an atom other than carbon, e.g. OR and O_2CR groups. A few compounds containing more than one antimony atom $((RSb)_n$, $(X_2Sb)_nR$, and cyclic species) are included, and there are brief sections on stibabenzene, stibacarborene and some R_2SbX and $RSbX_2$ compounds referred to in patent literature without detailed specification of the R groups. Transition metal compounds are described in detail if they are of the type R_2SbX and $RSbX_2$ in which X contains a transition metal, but if the stibine only donates a lone pair to a transition metal complex then the resulting complex is mentioned only under the

reactions of the relevant stibine. Coverage is complete for literature published up to the end of 1978, and some more recent information is included.

For all compounds the methods of preparation and physical properties, and chemical reactions are outlined, and the general standard appears to be at the high level which we have come to expect from this invaluable series. (I did notice an erroneous spelling of the name D. Seyferth on page 11, but it is too much to expect even these carefully prepared volumes to be entirely free from minor errors.) The book is very well produced, and there is a clear formula index. It is expensive for its size, but it will amply repay its purchase price in the library of any organization concerned with organoantimony compounds, including, of course, those in which such species are primarily of interest as ligands for transition metals.

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Advances in Organometallic and Inorganic Polymer Science; edited by Charles E. Carraher, Jr., John E. Sheats and Charles U. Pittman, Jr., Marcel Dekker, Inc., New York and Basel, 1982, 472 pages, Sw.Fr. 192.00.

This volume covers such a wide field that it would be impossible to indicate its range comprehensively without discussing all the individual contributions. In general, each chapter is partly in the nature of a review and partly a research paper. Certainly, the editors have assembled an excellent team of authors for this purpose, all of them being very active in the development of their specific areas of interest.

The first, General, section of the book brings up-to-date the state of poly-metallocene chemistry and also reviews the use of polymers for controlled release of toxins. Additionally, there is an extensive review of electrically neutral polymers which incorporate metals, compounds interesting from the points of view of conductivity and flammability.

The New Procedures and Techniques group of chapters is a mixed bag containing, inter alia, interesting discussions of the trimethylsilylation of mineral silicates and of the uses of polymers as matrices for photochemical reactions of organometallic compounds. Other chapters cover metal vapour synthesis, other synthetic routes, and characterization.

There are three reviews of electrically conducting systems, currently a very active field of research, and three on catalysis, ranging from work related to metalloenzyme function to extensions of Wilkinson's catalyst.

The final section contains three papers on polyphosphazines, including one by H.R. Allcock.

Although not completely comprehensive as a text book on organometallic and inorganic polymers, there is some very good material here but, unfortu-