

Book Reviews

Comprehensive Chemical Kinetics; Edited by C.H. Bamford and C.F.H. Tipper, Elsevier Publishing Company, Amsterdam, London, New York; Vol. 4, *Decomposition of Inorganic and Organometallic Compounds*, 1972, xii + 272 pages, Dfl. 87.50 (ca. \$27.25); Vol. 7, *Reactions of Metallic Salts and Complexes and Organometallic Compounds*, 1972, xvi + 615 pages, Dfl. 180.00 (ca. \$56.25); Vol. 13, *Reactions of Aromatic Compounds*, 1972, xii + 508 pages, Dfl. 160.00 (ca. \$50.00).

The aim of this series is to provide a comprehensive survey of all measurements of the rates of chemical processes and their significance for reaction mechanisms. It is a most formidable undertaking, and while the degree of comprehensiveness undoubtedly varies from chapter to chapter there can be no doubt that the series will become a standard and much quoted work of reference, and will greatly ease the burden of literature searching. The volumes reviewed here are those of special interest to organometallic chemists.

Vol. 4 contains the following chapters: 1, Kinetics of the homogeneous decomposition of hydrides (K.H. Homann and A. Haas, 45 pages); 2, The decomposition of inorganic oxides and sulphides (K.F. Preston and R.J. Cvetanović, 95 pages); 3, Decomposition of halides and derivatives (D.A. Armstrong and J.L. Holmes, 53 pages); 4, The decomposition of metal alkyls, aryls, carbonyls, and nitrosyls (S.J.W. Price, 61 pages). The whole of chapter 4 is of considerable interest to organometallic chemists, but a section in chapter 1 on the decomposition of the hydrides (including the organometallic hydrides) of silicon, germanium, and boron should also receive the attention of some readers of this Journal.

Vol. 7 contains the following chapters: 1, Reactions of inert complexes and metal organic compounds (C.H. Langford and M. Parris, 55 pages); 2, Reactions in solution between metal ions of the same element in different oxidation states (P.J. Proll, 97 pages); 3, Oxidation–reduction reactions between complexes of different metals (D. Benson, 121 pages); 4, Oxidation–reduction reactions between covalent compounds and metal ions (T.J. Kemp, 236 pages); 5, Induced reactions (L.J. Csányi, 71 pages). Chapter 1, which is concerned with ligand replacement reactions of transition metal complexes, is clearly of substantial interest to many organometallic chemists.

Vol. 13 contains the following chapters: 1, Kinetics of electrophilic aromatic substitution (R. Taylor, 406 pages); 1, Nucleophilic aromatic substitution: the S_N2 mechanism (S.D. Ross, 25 pages); Aromatic rearrangements (D.L.H. Williams, 54 pages). The chapter by Taylor, which lists about 850 references, represents an outstanding effort, and illustrates just what the adjective ‘comprehensive’ should mean in the context of a series of this nature. The detailed experimental results are listed clearly in every section, their validity and significance assessed, anomalies pointed out, and mechanistic implications

clearly described and evaluated. Indeed the chapter should probably have appeared as a separate book, since somewhat hidden away as a section in this series it may not get the use it deserves. Its special interest to organometallic chemists lies mainly in the thorough accounts of mercuration and of the electrophilic cleavages of bonds between aryl groups and magnesium, boron, silicon, germanium, tin, lead, and mercury.

The volumes are well produced, and contain good subject indexes, but no author indexes. The prices are normal for reference works by present day standards, and the whole series should be high on the priority list for the libraries of the great majority of centres of chemical research.

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Organometallic Compounds. Methods of Synthesis, Physical Constants and Chemical Reactions. 2nd Edition. Vol. 3. Compounds of Arsenic, Antimony, and Bismuth. First Supplement, covering the literature from 1965 to 1968; Ed. by M. Dub, Springer-Verlag, Berlin/Heidelberg/New York, 1972, xxi + 613 pages, DM 78.20 (ca. US \$24.80).

This supplement surveys the literature and patents covered in Volumes 62–69 of Chemical Abstracts, and includes some references from Volumes 60 and 61 which were omitted from the original series. (The information is, however, mainly taken from the original publications not the abstracts.) As is pointed out in the Preface that the increase in the output of chemical information is such that this supplement, dealing only with the period 1965–1968, includes almost three-quarters as many references as the main volume, which covered the period 1937–1964.

All purchasers of the original volumes in this most useful set [see *J. Organometal. Chem.*, 16 (1969) 519] will want this supplement, which is most reasonably priced for its size and nature, and for specialists in the field of organometallic chemistry of arsenic, antimony and bismuth it will be a most valuable reference work even in isolation. But its usefulness is certainly not confined to organometallic chemists primarily interested in these elements, since the coverage includes arsine, stibine, and bismuthine derivatives of main group and transition elements.

Supplements to Volumes I (Transition Metals) and (II) (Germanium, Tin and Lead) are in preparation.

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