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Book reviews

Gmelin Handbook of Inorganic Chemistry, 8th Edition, Sn. Organotin Compounds. Part 17, Springer Verlag, Berlin, 1989, xiv + 245 pages, DM1133.00. ISBN 3-540-93596-7 and 0-387-93596-7.

This latest addition (written by H. Schumann and I. Schumann) to the excellent Gmelin series on organotin compounds continues the coverage of mononuclear organotin compounds containing tin–oxygen bonds, and is concerned mainly with compounds of the types $RSn(OR')_3$, $RSn(OR')_2(OR'')$, $R_2Sn(X)OR'$, $RR'Sn(X)OR''$, $RSn(X)(OR')_2$, and $RSnX_2(OR')$, where R is usually an alkyl or aryl group and X is hydrogen, halogen, or pseudohalogen. Related cyclic species such as $Me(Br)Sn \leftarrow O{=}C(Me)CH{=}CMeO$ are also dealt with. The closing date for literature coverage is 1987. There is, as usual in this series on organotin compounds, a very useful list of more recently published books, reviews, or papers of general significance in the field, especially papers dealing with analytical methods or toxicity and applications. There is also a list of relevant patents.

The selection and presentation of the material are of the high standard we take for granted in the Gmelin volumes. The series on organotin compounds, invaluable to organotin chemists, will probably be more widely consulted as interest in their biological and chemotherapeutic aspects increases.

School of Chemistry and Molecular Sciences,
University of Sussex, Brighton BN1 9QJ (UK)

Colin Eaborn

Advances in Physical Organic Chemistry, Vol. 25; edited by D. Bethell, Academic Press, London, 1989, £60.00. ISBN 0-12-033525-5.

This series of volumes maintains a consistently high standard, and in spite of its unpromising title commonly contains material of direct interest to organometallic chemists. In this latest volume such interest attaches especially to the chapter (165 pages) by G.R.J. Thatcher and R. Kluger entitled "Mechanism and Catalysis of Nucleophilic Substitution in Phosphate Esters". This authoritative survey will mainly be read by phosphorus chemists, but much of the material (e.g. that on apicophilicities and *d*-orbital effects) has a wider relevance, especially, in view of the mechanistic analogies between reactions at silicon and phosphorus centres, to organosilicon chemists. A chapter (96 pages) by U. Berg and J. Sandström entitled "Static and Dynamic Stereochemistry of Alkyl and Analogous Groups" is also of relevance to those interested in structures and conformations of alkyl derivatives of metals, although organosilicon compounds are the only organometallic species actually considered.

I had hoped that the chapter (179 pages) by M. Ballester entitled "Perchloro-organic Chemistry: Structure, Spectroscopy and Reaction Pathways" would deal