

in theoretical terms some still need more detailed consideration; for example the rather surprising similarity of the effects of Me and MeO groups on the acidities of the silanols $\text{Me}_x(\text{MeO})_{3-x}\text{SiOH}$.

This series makes a valuable contribution to the development of organosilicon chemistry, and some reviews will be of use to a wide range of chemists; in this volume, for example, synthetic organic chemists will find much of interest in the well-organized account of α , β -epoxysilanes.

Colin Eaborn

*School of Chemistry and Molecular Sciences
University of Sussex
Brighton BN1 9QJ
UK*

Gmelin Handbook of Inorganic and Organometallic Chemistry. 8th Edition

Organogermanium compounds. Part 4. Compounds with germanium-hydrogen bonds

U. Krüerke, C. Siebert and B. Wöbke (eds.) Berlin, 1994. 364 + xiv pages. DM 2200
ISBN 3-540-93696-3

This volume, compiled by J.E. Drake, C. Siebert, and B. Wöbke, continues in the excellent tradition of the Gmelin series. It is concerned with mononuclear compounds containing only Ge-C and Ge-H bonds; those containing Ge-H bonds along with bonds to non-carbon atoms, such as halogen, oxygen, or nitrogen, have been, or will be, dealt with in other volumes. Over half of the volume is concerned with monohydrides of the type GeR_3H and GeR_2RH ; and GeR_2H_2 , GeRR^1H_2 and GeRH_3 take up 23, 8, and 60 pages, respectively. There is the usual empirical formula index and a (very useful) ligand formula index. The literature up to the end of 1992 is fully covered, and there are a few later references.

What a superb series this is, and what a pity that the price of the volumes means that it is often not found in all the institutions in which it should certainly be available. (The progressive rise in the value of the German currency unfortunately makes purchase even less likely in most other countries.)

Colin Eaborn

*School of Chemistry and Molecular Sciences
University of Sussex
Brighton BN1 9QJ
UK*

Gmelin Handbook of Inorganic and Organometallic Chemistry. 8th Edition

*Sn organotin compounds. Part 21. U. Krüerke (ed.), Berlin, 1994, 309 + xiii pages. DM 1890.00 Sw.Fr.1853.00
ISBN 3-540-93690-4*

This is the latest addition to the comprehensive series on organotin compounds that now comprises 21 volumes, with more to come. This volume, which was compiled by H. Schumann and I. Schumann, is concerned with organotin compounds containing bonds between tin and transition metals of Groups III-VII (3-7), specifically, Y, La, Pr, Nd, Yb, U, Ti, Zr, Hf, V, Nb, Ta, Cr, Mo, W, Mn and Re. The usual information is given for each compound, viz. preparation, physical properties and reactions, much of it in convenient tabular form. In addition, in a feature of great value in this series on organotin compounds, there are lists of relevant recent reviews dealing with physical properties, reactions, analysis, environmental aspects, and uses of organotin compounds in general.

The excellent set of volumes on organotin compounds becomes more and more valuable as it becomes more comprehensive. It is hard to believe that any laboratory concerned with research on or use of organotin compounds can function wholly efficiently without having it available.

Colin Eaborn

*School of Chemistry and Molecular Sciences
University of Sussex
Brighton BN1 9QJ
UK*

Organic Reactions. Equilibria, Kinetics and Mechanism

F. Ruff and I.G. Csizmadia. Elsevier, Amsterdam, 1994. 480 pages. Dfl. 380.00; USD 217.25
ISBN 0-444-88174-3

Although this book has very little organometallic content I think a review in this Journal is justified because it describes general methods of determination of mechanism that are applicable also to organometallic chemistry, and does so with exceptional clarity.

The overall content is much like that of the many previously available books on organic reaction mechanisms. Chapters on methods of elucidating mechanisms, (especially those involving kinetic studies) and on energetics, are followed by those on: structure-activity relationships; isotope effects; environmental effects (of solvents and salts); acids; bases; electrophiles, and nucleophiles; and homogeneous catalysis (including a brief introduction to catalysis by transition metal ions or complexes). Where it differs from most of the other

books is in the simplicity and the clarity of the discussion without sacrifice of rigour. (The chapter on isotope effects is in my view especially effective.) If I were now involved in teaching in the field of organic mechanisms (as I was for many years) I would recommend this book as a primary text for both undergraduates and postgraduates. It could also certainly be read with advantage, or at the very least consulted, by those engaged in studies of mechanisms of organometallic reactions.

It is a pity that the authors have so thoroughly excluded consideration of reactions of organometallic species. After all, those involving cleavages of C–metal bonds, much used in organic synthesis, are no less organic reactions than those involving breaking of, say, C–H or C–Br bonds. Students of organic chemistry should at least be aware, for example, that reactions of aryl–M bonds (e.g. M = Hg, Si, Sn) with electrophiles are no less electrophilic aromatic substitutions than those of aryl–H bonds. There are other omissions; for example, carbanions are mentioned only in one short sentence. But the book must be judged on what it does contain rather than on that which a particular reader may think is wrongly omitted, and on that basis it is first class, and can be thoroughly recommended. It is a great pity that its very high price will largely rule out purchase for personal use.

Colin Eaborn

*School of Chemistry and Molecular Sciences
University of Sussex
Brighton BN1 9QJ
UK*

Fieser and Fieser's reagents for organic synthesis

M. Fieser, Wiley Interscience, New York, 1994, 443 pages £49.50 USD 68.95
ISBN 0-471-00074-4

This volume in a highly regarded series deals with information appearing in late 1990 to early 1993. It is reviewed in this Journal because the great majority of the reagents considered are organometallic species, including organic derivatives of Li, Mg, Ba, Y, Ce, Sm, Ti, Cr, Yb, Mn, Ru, Rh, Ir, Ni, Pd, Pt, Cu, Ag, Zn, Hg, B, Al, Tl, Si (many entries), Sn, Pb, Sb and Se. (Other metals appear as inorganic derivatives, including La, W, Re, Fe, Os, and Ga). Indeed a glance through the book provides an impressive indication of the great and increasing importance of organometallic compounds in organic synthesis.

Organometallic chemists will find some of the nomenclature unusual, and indeed incorrect; for example on the first page $\text{Al}(\text{SiMe}_3)_3$ is named as aluminium tris(trimethylsilane).

This is a valuable and reasonably priced addition to an important series.

Colin Eaborn

*School of Chemistry and Molecular Sciences
University of Sussex
Brighton BN1 9QJ
UK*