

Gmelin handbook of inorganic chemistry. 8th edition. *Organolead compounds, Part 1. Tetramethyllead*. Springer-Verlag, Berlin etc. 1987. xii + 194 pages. DM896. ISBN 3-540-83560-6.

This is the first volume in the new Gmelin series on organolead compounds, which is expected to run to four or five volumes. Fittingly, since the considerable industrial importance of tetramethyl- and tetraethyl-lead has stimulated much of the research on organolead compounds, and since tetramethyllead is the simplest organolead derivative, the volume is devoted very largely to that compound. However, the first 52 pages consists of references to textbooks, reviews, or reports dealing with general aspects of organolead chemistry (alone or in relation to the chemistry of other Group 14 compounds), including analytical methods, toxicity, biocidal activity, uses, and environmental aspects. Then follows a brief outline (3 pages) dealing with general properties of tetraorganoplumbanes of the type PbR_4 and giving references to their chemistry and uses, and this leads into a comprehensive account of all aspects of the chemistry of tetramethyllead.

This detailed account is divided into the following sections: formation, preparation (including that on an industrial scale), purification, and analysis (totalling, with references, 41 pages); structure, spectra, and bond dissociation energy (20 pages); physical properties (6 pages); chemical reactions (33 pages); electrochemical behaviour (1 page); solubility (3 pages); physiological properties and toxicity (8 pages); radiation chemistry (2 pages); uses (9 pages); environmental aspects (13 pages); coordination compounds (1 page). The coverage is complete up to the end of 1986, and there are some 1987 references.

The overall impression is one of excellence, and the author, Dr. F. Huber, is to be congratulated, and thanked for his service to organometallic chemistry. The writing is concise but admirably clear, and the English (unlike that in some earlier Gmelin volumes) is good; there are a few minor errors (e.g. linear dependence *with* concentration instead of *on*), but overall the style and grammar are better than in most papers in the primary chemical journals published in English.

We must hope that the remaining volumes on lead come up to this high standard.

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Chemical research faculties, 1988, American Chemical Society, Washington, 1988, ca. 750 pages. \$159.95 (in USA or Canada) or \$191.95 (elsewhere), ISBN 0-8412-1017-9.

This is the second edition of an excellent reference work prepared and published by the American Chemical Society. It is a companion volume to the highly regarded *Directory of Graduate Research*, and consists mainly of a list of about 11500 members of faculty of departments of chemistry, chemical engineering, biochemistry, pharmaceutical/medicinal chemistry, polymer science, or toxicology in 107 countries outside the USA and Canada. For each person are given that the year of birth, academic qualifications, research interests, and up to two recent publications. There is also a statistical summary, listing for each department the numbers of full-time faculty, postdoctoral fellows, postgraduate students, and masters' and

doctors' degrees awarded in 1984–85 and 1985–86, but this seems to me to contain obvious inaccuracies, probably arising from misunderstanding of the questions asked, or from simple carelessness, on the part of those providing the information. Thus it seems unlikely that the chemistry department of the Technical University of Vienna had 778 postgraduates enrolled in January 1987 and yet granted only 8 masters' and 6 doctors' degrees in 1984–86. Also surprising is that the chemistry department at the Université Claude Bernard, Lyons I is said to have 300 full time members of faculty, and the 700/9 ratio of postgraduate students to faculty members in chemistry at the Ruprecht Karl Universität, Heidelberg, seems worryingly large. Certainly there is an error in the report that my own department granted no doctorates in 1984–86 although having 118 postgraduates enrolled in January 1987; there were, in fact, 50 doctors' degrees awarded in the relevant period.

In addition to the addresses of each department mentioned, the book also gives useful information about 72 chemical societies around the world. There is an index of names of faculty members, and also one of research interests, which makes it easy to locate centres of activity in specialized fields.

The range of countries included is impressively wide, but there are gaps: in particular, most of the Socialist Bloc countries are missing, though there is a little information from Hungary and Czechoslovakia. Furthermore the coverage is very incomplete for some countries; for example, most of the major university chemistry departments in Italy are missing, as well as most CNR centres. The coverage is fairly complete for the UK, but no information was supplied by the Universities of Aston, Bradford, City, Dundee, and Reading, and for Leeds the information refers only to organic chemistry, and that for Liverpool only to inorganic, physical, and polymer chemistry. In my view future editions would be much improved if the compilers asked a suitable person in each country to collect the information, or at least check that gathered from Washington and seek to correct and supplement it where necessary.

I find this volume, in spite of its minor defects, invaluable, and would hate not to have it available to me. It is the first place I turn to for information, including addresses, for academic chemists even in my own country. The publication will become better still when it is as well known and as much used as it deserves to be, and organizations that at present fail to supply the information requested realize that they are unwise not to contribute. The American Chemical Society provides a most valuable service to chemists by producing it.

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