

Gmelin Handbook of Inorganic and Organometallic Chemistry, 8th Edition, Ga Supplement Volume D3. Coordination Compounds 3, Springer, Berlin, 1995, pp. 397 + xv, DM 2290, Sw.Fr. 1993, ISBN 3-540-93717-X

This volume supplements the material in the related volumes D1 (1992) and D2 (1995) to complete the coverage of the coordination compounds of gallium. The first 17 pages deal with complexes containing azo compounds, triazenes, Schiff bases, hydrazones, formazones and nitriles, and the next 75 pages with those bearing sulfur-containing ligands, especially thiols, sulfanes and S-heterocycles, but with brief entries for a large number of other types of ligand such as thiones, sulfoxides or individual ligands such as hydrogen sulfide, thionyl chloride, dithiocarbazic acid, and tetrasulfur tetranitride. Some 68 pages are devoted to ligands containing P, and some relatively small sections to those containing Ge, B, Si and As. A large proportion of the complexes described were observed only in solution, and much detailed information is given on their behaviour under these conditions. Literature coverage is complete to 1993.

The compilation and presentation of material is up to the high standard associated with Gmelin volumes. Some years ago in reviewing such volumes I had regularly to complain about the number of errors of English in accounts otherwise so carefully produced, but they have been much rarer in recent years. This volume, however, has some minor infelicities (e.g. "by *dropwise adding* a solution..."; "using the procedure *referred* on page..."; "the compound *sublimates* with decomposition"; "... were prepared *under* exclusion of air..."; "the fragmentation in the mass spectra is interpreted *by* the existence of two tautomeric forms...") though in no case is there any doubt about the meaning.

These three volumes on coordination compounds of gallium provide a comprehensive up-to-date survey of the subject, and will be invaluable to those working in the field. There is a very useful Ligand Formula Index to the three volumes, which takes up 100 pages. It lists all the ligands in a conventional sequence of empirical formula along with structural formula in linear form, with the volume(s) and page(s) in which they are mentioned. This enables the reader to locate complexes of particular ligands even if the full formula of the compounds are not known. It is noteworthy that the range of fullerene derivatives extends into gallium chemistry,

the largest ligand listed being the heterofullerene $C_{192}H_{60}N_{48}$.

Colin Eaborn

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

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Ziegler Catalysts. Recent Scientific innovations and Technological Improvements, G. Gink, R. Mulhaupt and H.H. Brintzinger (Eds.), Springer, Berlin, 1995, pp. 511 + xiii, DM 198.00, SFr. 187.00, ISBN 3-540-58225-8

This volume is a presentation of the lectures delivered at an international symposium entitled "40 years Ziegler Catalysts", held in Freiburg, Germany, on September 1-3, 1993, in honour of Karl Ziegler. It is an impressive compilation of authoritative articles by a good proportion of leaders in what has become a rather wide field.

The volume begins with two interesting historical surveys, the first a 13 page contribution entitled "Karl Ziegler — The Last Alchemist", by G. Wilke, and the second a 33 page account entitled "Patent Right Aspects in Connection with Four Decades of Ziegler Catalysis", by H. Martin. Then follow 27 papers mainly concerned with new work by the authors concerned, many giving more detail (including experimental detail in some cases) than is common in reports of conference proceedings. The following fairly random list of titles gives some idea of the scope of the volume: the role of MAO-Activators; isospecific pseudo-helical zirconocenium catalysts; the relationship between kinetics and mechanisms; models for the explanation of the stereospecific behaviour of Ziegler-Natta catalysis; a combined density functional and molecular mechanics study on olefin polymerization by metallocene catalysts; olefin polymerization with single component organoscandium and organoyttrium catalysts; gas-phase polymerization of olefins with Ziegler-Natta and metallocene/aluminoxane catalysts; a comparison; advances in propylene polymerization with $MgCl_2$ supported catalysts; enantiomorphic sites and stereospecific polymerizations of chiral 1-olefins; recent developments in the synthesis of functionalized polymers via living ring-opening metathesis polymerization.

The volume is, to my mind, distinctly more interesting and useful than most collections of symposium lectures, and gives a good idea of the state of the subject and the way it is going. Commendably, it has a subject index, though (as is not unusual now that the selection of entries is commonly made by computers without careful assessment by an expert in the field) it contains some singularly unhelpful items (each referring to only one page) such as: acceleration effect; bidentate bridge; decreasing effect; history of chemistry; ligands; polymerization results; rotational barrier.

At today's levels, the price, for 511 well packed and well presented pages, is reasonable.

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

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