

## Book Reviews

*Gmelin Handbook of Inorganic and Organometallic Chemistry, 8th edition Iron, Organoiron Compounds, Part A, Ferrocene 10*  
Springer-Verlag, Berlin, 1991, pp. 365 + xiii. DM 1890. ISBN 3-540-93640-8

This volume covers the literature systematically until the end of 1986. It finishes the treatment of unbridged disubstituted ferrocenes started in Ferrocene 7, and deals with substituents based on P, As, or a metal. It also deals with trisubstituted ferrocenes.

This volume is the usual impeccable Gmelin production, and it will be of considerable value to research groups, not least my own. However, if it takes five years to publish from completion of information collection, and 10 volumes do not suffice to deal with all of ferrocene chemistry, it may lead one to doubt the long-term viability of the Gmelin project. At least one point is worth making. A detailed literature search, in say Chemical Abstracts, to identify and organise material on an aspect of ferrocene dealt with here would take many man hours. If these are properly costed, the prices of these volumes becomes suddenly quite reasonable. Long may they continue.

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*Gmelin Handbook of Inorganic and Organometallic Chemistry, 8th edition Iron, Organoiron Compounds, Part C 6a, Trinuclear Compounds* Springer-Verlag, Berlin, 1991, pp. 320 + xiii. DM 1665. ISBN 3-540-93631-9

This volume covers the literature completely up to the end of 1989, and in part up to mid-1991. It deals with trinuclear iron compounds with ligands only of the Gmelin type <sup>1</sup>L. These are mainly, but not exclusively, carbonyls, and the data are arranged in order of increasing CO content, from three CO up to nine CO. The nuclearity as defined in these volumes is determined by the iron alone. Thus, the volume deals with compounds such as  $[\text{Fe}_3(\text{CO})_8(\text{RhC}_5\text{Me}_5)(\mu_4\text{-PPh})_2]$

though this might be thought of as tetranuclear. The bridging ligands include compounds of elements of Groups 15 and 16, and the additional transition metal hetero-atoms are from Groups 6–11.

As usual, this is a comprehensive and invaluable production. I am still happier using a book for basic reference than a computer terminal and find the presentation very acceptable. How long the Gmelin Institute can carry on this labour of love is not clear, but I hope that it is for a considerable time to come.

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*The Chemistry of Organophosphorus Compounds, Volume 2: Phosphine Oxides, Sulphides, Selenides, and Tellurides*

Edited by Frank R. Hartley, in the series *The Chemistry of Functional Groups*, edited by Saul Patai, John Wiley and Sons, Chichester, 1992, pp. 647. £160.00 ISBN 0-471-93056-3

This is the second of a planned 4-volume series on the chemistry of organophosphorus compounds. The first chapter, by Gilheany (287 references) considers structural and bonding aspects in tertiary phosphine chalcogenides, and builds on the same author's contribution to Volume 1. A variety of experimental and theoretical approaches are discussed concerning the non-involvement of d-orbitals in these types of compounds, and the differing views on the multiplicity of the P=O bond. An understanding of the contents of this chapter is crucial for a proper appreciation of all the subsequent chapters, and the author has assembled the often conflicting information in a very readable way.

Gallagher reviews structural and stereochemical aspects of secondary and tertiary phosphine chalcogenides (94 references), mainly concentrating on oxides. Attention is paid to resolution methods and spectroscopic studies aimed at the elucidation of diastereoisomerism and conformation. Stereochemical