

## Book reviews

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*Gmelin Handbook of Inorganic Chemistry*, 8th Edition, *Osmium*, Supplement Volume 1. *Element and Compounds*, W.P. Griffith and C.J. Raub, volume authors, K. Swars, volume editor, Gmelin Institut für Anorganische Chemie der Max-Planck-Gesellschaft zur Förderung der Wissenschaften and Springer-Verlag, Berlin/Heidelberg/New York, 1980, xv + 347 pages, DM 798, \$470.90 (in English).

The chemistry of osmium was last reviewed by the Gmelin Institute in 1939. The present volume is the first supplement to the main volume; a second supplement will deal with organometallic osmium compounds. This volume is written entirely in English and is divided into four parts.

Parts one (19 pages) and two (52 pages) by C.J. Raub cover the properties of elemental osmium and osmium alloys. Included are thermodynamic, electrical, magnetic, mechanical and structural data. Numerous graphs and phase diagrams are presented. The literature is covered from 1938 to 1978 and includes some work published in 1979.

Part three, "Osmium Compounds" (112 pages), by Raub and W.P. Griffith and part four, "Coordination Compounds of Osmium" (162 pages), by Griffith are a welcome update of the information contained in Griffith's earlier book, *The Chemistry of the Rarer Platinum Metals*. "Osmium Compounds" covers the oxides, halides, and chalcogenides as well as simple compounds of osmium with boron, carbon, silicon, phosphorus, or antimony. "Coordination Compounds of Osmium" includes complexes which have oxygen, nitrogen (including nitrosyl), halide, and sulfur donor ligands as well as those having phosphine, arsine, or stibine ligands. Hydride complexes are included but are found under the section appropriate for the other ligands in the complex. The only carbon donor ligands treated in this volume are cyanide and fulminate. Both parts provide comprehensive synthetic, spectroscopic, magnetic, and structural data; particularly useful are tabular summaries of series of related compounds. The distinction between "Compounds" and "Coordination Compounds" is not always clear, but confusion is avoided by thorough cross-referencing.

A maximum amount of information is presented in a minimum amount of space. Although discussion is brief, controversial issues or contradictions in the literature often are indicated. Literature references are conveniently placed at the end of each subsection. A subject or formula index is not included; however, the table of contents is sufficiently detailed that a reader should have little difficulty locating a particular topic.

This volume is a fine addition to a distinguished and valuable reference series.