

Gmelin Handbook of Inorganic Chemistry, 8th Edition—Main Volumes; System No. 53, **Molybdenum—Supplement Volumes**, part B: **Compounds**, Section 1: **Compounds with Rare Gases, Hydrogen, Oxygen. Anhydrous Antimony, Bismuth and Alkali Molybdates**. Springer-Verlag, Berlin—Heidelberg—New York, 1975. 241 pp., clothbound DM 509.

This volume is the first of a series of supplement volumes that concern compounds of molybdenum and tungsten beginning with chapters dealing with adsorption and desorption tests, as well as diffusion rate measurements of inert gases, hydrogen and oxygen on molybdenum. The chapter with oxygen is continued with oxidations of molybdenum in oxygen, with the formation and transitional reactions of the oxides and by detailed presentations of MoO_2 and MoO_3 . Also, intermediary oxides are discussed in detail.

After two short chapters about antimony and bismuth molybdates, a special description of the molybdenum oxide-bronzes is included which, because of the excellent harmony of text, structural illustrations and diagrams, deserves acknowledgement.

In the closing chapter anhydrous alkali molybdates are dealt with. Literature closing date: completely up to mid-1974, in many instances more recent data have been included.

Gmelin Handbook of Inorganic Chemistry, 8th Edition—Main Volumes; System No. 47, **Lead—Part A: History. Occurrence**. Section 2 c: **Sedimentary Cycle, Metamorphic Cycle, Hydrosphere, Atmosphere**. Springer-Verlag, Berlin—Heidelberg—New York, 1975, 185 pp., clothbound DM 398.

The present volume is the first of a series, all dealing with the cosmochemistry and geochemistry of lead. It covers the sedimentary and metamorphic cycles, as well as the hydrosphere and atmosphere. For each of the mentioned subjects, the origin and occurrence of lead and its behaviour in the light of chemical and geological factors are discussed.

This comprehensive realization as well as the extensive listing of the lead content in the air, in precipitations, in different kinds of water and in various kinds of rock, represent a very valuable reference book for the interested. Literature closing date: 1974, in individual cases more recent data have been considered.

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Gmelin Handbook of Inorganic Chemistry, 8th Edition—Main Volumes; System-No. 56, **Manganese—Part C: The Compounds**; Section 3: **Compounds of Manganese with Oxygen and Metals of Group 3 to 6 of Periodic System, Manganese—Nitrogen Compounds**. Springer-Verlag, Berlin—Heidelberg—New York, 1975, 307 pp. geb. DM 592.

This volume treats the compounds and phases of manganese with oxygen and metals of the third to sixth groups of the periodic system in seven chapters, according to the main and subgroups. For these compounds, the magnetic and electrical properties as well as the crystal structures are of special interest and have therefore been extensively studied.

The second and shorter division of the volume comprises the compounds with nitrogen, *i.e.* compounds containing hydrogen and oxygen are also described besides nitrides and azides. A presentation of numerous systems and double salts belonging to the main and subgroups 1 to 6 of the periodic system follows. The present volume is excellently arranged and written in Gmelin's proved manner. Diagrams and structural illustrations articulate and complete the text, though the latter should be more numerous. At the beginning of each chapter there are short reviews in German and, for a better understanding of foreign users, also in English.

Literature closing date: up to end-1974, in many instances more recent data have been included.

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Gmelin Handbook of Inorganic Chemistry, 8th Edition—Main Series; System No. 56, **Manganese—Part C—The Compounds**, Section 6: **Compounds with Sulfur, Selenium, and Tellurium**. Springer Verlag, Berlin—Heidelberg—New York, 1976; 360 pp., clothbound DM 765.

The present volume "Manganese C_6 " is divided into three main sections, which deal with the compounds of manganese with sulfur, selenium, and tellurium. The compounds with sulfur take considerably more space than the compounds with the other two elements. The double and multiple compounds with other metals are treated following the pure compounds, as in the previous volumes "Manganese" C_1 to C_3 .

Among the compounds with tellurium, in particular the telluride MnTe and its solid solutions with other metal tellurides are especially well known.

Larger chapters are preceded by a review in German and English. The present volume is excellently arranged and therefore a valuable reference book.

Literature closing date: up to end of 1975, in some instances more recent data have been included.

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The Chemistry of Cyano Complexes of the Transition Metals, By A. G. Sharpe, published by Academic Press, London, 1976; Pages XI + 302. Price £ 26.25.

This book is a complete, up-to-date survey of the chemistry of transition-metal cyano complexes. All transition metals in all oxidation states are extensively covered. The book starts with some general features of the chemistry of cyano complexes, such as preparative methods, structural chemistry, thermodynamics, and kinetic aspects.

After a few chapters (II, III, and IV) dealing with metals having only a limited number of cyano complexes: Scandium Yttrium, Lanthanides and Actinides (Chapter II, 14 references), Titanium, Zirconium and Hafnium (Chapter III, 7 references), and a more extended Chapter IV (35 references) discussing Vanadium, Niobium and Tantalum, the book continues discussing the metals with a larger number of cyano complexes. There are Chromium Molyb-

denum and Tungsten (Chapter V, 249 references), Manganese, Technetium and Rhenium (Chapter VI, 116 references).

The three following chapters deal with Iron, Ruthenium and Osmium (Chapter VII, 426 references), Cobalt, Rhodium and Iridium (Chapter VIII, 356 references), Nickel, Palladium and Platinum (Chapter IX, 284 references), and they are probably the most complete review one can find on the subject. As an example, cobalt cyano complexes in various oxidation states are extensively discussed and all the aspects – synthesis, equilibria, thermodynamics, spectroscopy, solid state, reactivity and kinetics – are focused. In the case of Platinum an interesting discussion on $>II$, $<IV$ oxidation state is reported.

The book ends with chapters dealing with the chemistry of Copper, Silver, and Gold (Chapter X, 157 references) and Zinc, Cadmium and Mercury (Chapter XI, 99 references) written and organized with the same great care and professionalism as the rest of the book.

In conclusion, this seems a very useful book, I found it attractive not only as a reference book, but also as a source of possible new ideas in the field.

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