New Data Compilations

Landolt-Börnstein, Numerical Data and Functional Relationships in Science and Technology, New Series. Group III: Crystal and Solid State. Vol. 4: Magnetic and Other Properties of Oxides and Related Compounds, Parts a and b. J. B. GOODENOUGH ET AL. (PART A) AND D. BONNENBERG ET AL. (PART B). K.-H. HELLWEGE AND A. M. HELLWEGE (EDS.). In German and English. Berlin and New York; Springer-Verlag. 1970 and 1970. 367 pp and 666 pp. Part a, $60; b, $117.50.

Volume III/4 of the New Series is a revision of a part of Volume II/9 of the sixth edition of Landolt-Börnstein published in 1962. The materials included in Part a are FeO oxides and Fe-Me-O compounds, compounds with lanthanides and actinides of some special structural types, perovskites, and yttrium, and rare earth iron garnets. Part b includes noniron garnets, spinels, hexagonal ferrites, and an alphabetical index to both Parts a and b. Simple compounds of the transition elements (except iron oxides) are omitted. Crystallographic and magnetic data are given for all substances included. Optical, electrical, and technological data are given for many substances when of special importance and not yet contained in other volumes of the New Series.

Landolt-Börnstein, Numerical Data and Functional Relationships in Science and Technology, New Series, Group III: Crystal and Solid State Physics. Vol. 3: Ferro- and Antiferroelectric Substances. T. MITSUI ET AL. K.-H. HELLWEGE AND A. M. HELLWEGE (EDS.). In German and English. Berlin and New York: Springer-Verlag. 1969. 584 pp. $96.

Volume III/3 of the New Series of Landolt-Börnstein represents an attempt to compile all reliable experimental data on 450 pure compounds and solid solutions of ferroelectric substances. Figures and tables are reproduced only when they are judged to be reliable; some references are given without presenting numerical data. Throughout this volume, data in tables and figures are given for room temperature unless otherwise stated. The compilation of data has been made on the basis of a bibliography prepared by Toyoda on about 5200 references to literature on ferro- and antiferroelectrics published before fall 1967. The data and properties presented include the following: history and fundamental properties, crystal growth, crystal structure, lattice distortions, thermal properties, electromechanical properties, elastic properties, optical properties, electrical conductivity, magnetic properties, nmr, esr, Mössbauer effect, diffraction phenomena, domain structure, surface layer, radiation damage, and miscellaneous properties.

Atlas of Protein Sequence and Structure 1965, 1966, 1967–68. M. O. DAYHOFF ET AL. R. V. ECK AND M. O. DAYHOFF. M. O. DAYHOFF AND R. V. ECK. Silver Spring, Md. National Biomedical Research Foundation. 1965, 1966, 1968. 92 pp; 235 pp; 376 pp. 1965 no longer available; 1966, $3.50 prepaid; 1967–68, $6.00 prepaid.

These Atlases collect in single volumes the known protein and nucleotide sequences and other related data for the periods up to 1965, 1966, and 1967, respectively. The Atlases are part of an annual sequence of volumes, each accumulating all extant material. These volumes deal with protein and nucleic acid sequences which are produced directly from sequence information in the genetic fields. Most of the available data pertains to proteins; however, some RNA sequences are included. Peptides, such as the antibiotics, which contain exceptional amino acids and are apparently produced by other synthetic routes are not included. The format used in the Atlas provides not only the experimental facts and ambiguities of the original literature but also permits the inclusion of information inferred from comparisons of homologous proteins. Sequences are presented in both three-letter and one-letter notations. The homologous sequences of families are aligned to permit rapid correlations of structure and to facilitate the formulation of laws of relationship among them.

Structure, Properties and Preparation of Perovskite-Type Compounds. F. S. GALASSO. Oxford, London, New York: Pergamon Press. 1969. 207 pp. $9.00.

This book contains data on the structure, properties, and the preparation of perovskite-type compounds. The oxide phases have been divided into two types: the ternary ABO_3-type compounds and their solid solutions, and the newer complex $A(B'_xB''_y)O_3$-type compounds. Structural data are presented for easy reference. The identification of distortions in ternary perovskite-type compounds and of ordering in complex perovskite compounds using X-ray diffraction techniques is included. The properties of the perovskite compounds covered are: electrical conductivity, ferroelectricity, ferromagnetism, optical transmittance, the electro-optical effect, catalytic properties, melting points, heats of formation, thermal expansion, densities, and mechanical properties. Other information included is preparation methods of these compounds as powders, thin films, and single crystals. There is also a chapter on compounds other than oxides having the perovskite structure.

Thermophysical Properties of Matter: Volume 4. Specific Heat, Metallic Elements and Alloys; Volume 5. Specific Heat, Nonmetallic Solids; Volume 6. Specific Heat, Nonmetallic Liquids and Gases. Y. S. TOULOUKIAN AND E. H. BUYCO (VOLUMES 4 AND 5); Y. S. TOULOUKIAN AND T. MAKITA (VOLUME 6). New York, N. Y., and Washington, D. C.: IFI/Plenum. 1970, 1970, 1970. 830pp; 1738 pp; 384 pp. Volumes 4–6, $155; singly, $65, $100, $40.

Volumes 4, 5, and 6 of "Thermophysical Properties of Matter" are comprised of three major sections: the front text matter, together with its bibliography; the main body of numerical data and its references; and the material index. Volume 4 covers the metallic elements and most metallic alloys of engineering importance; Volume 5 covers most nonmetallic elements, oxides, and other nonmetallic solids of engineering importance which are solids at normal temperature and pressure; Volume 6 covers the specific heat of 56 fluids and presents data on nonmetallic materials which are in the liquid or gaseous state at normal temperature and pressure. All data were extracted from the original source and some gross errors appearing in the original source documents have been corrected. Although the data compiled in Volumes 4 and 5 have not been reviewed or critically evaluated, all the data presented in Volume 6 have been critically reviewed and analyzed, and "recommended values" are presented. There is a material index at the end of each volume.

Tracer Diffusion Data for Metals, Alloys, and Simple Oxides. J. ASKILL. New York: IFI/Plenum Press, 1970. 107 pp.

The main purpose of this book is to bring together in one compilation all the radioactive tracer diffusion data of metals in pure metals, alloys, and simple oxides that have been reported in the literature between 1938 and December 1968. The data have been divided into four parts: self-diffusion in pure metals, impurity diffusion in pure metals, self- and impurity diffusion in alloys, and self- and impurity diffusion in simple metal oxides. Over 1200 diffusion entries are included with elements and solutes arranged alphabetically. A complete list of references and index of authors are also given.