Landolt–Börnstein. Numerical Data and Functional Relationships in Science and Technology. New Series. Group III: Crystal and Solid State Physics. Vol. 7. Crystal Structure of Inorganic Compounds, Part b, Key Elements O, S, Se, Te; Part b3 Key Elements, S, Se, Te; by W. Pies and A. Weiss, Springer-Verlag, 1982, xxvii + 435 pages, DM 740.

This latest volume of this long established and highly regarded reference work presents crystal structure data for compounds of sulfur, selenium, and tellurium. The main types considered are sulfides, trioxosulfates(IV) (sulfites), tetraoxosulfates(VI) (sulfates), further oxo-compounds of sulfur (e.g. sulfoxylates, thiosulfates), and the corresponding derivatives of selenium and tellurium. The information appearing is from papers published in 1972–1978, and is presented in tabular form with the clarity associated with this series.

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Metal Carboxylates; by R.C. Mehrotra and R. Bohra, Academic Press Inc. (London), 1983, 396 + viii pages, £39.40 ($65.00)

Although the majority of the compounds dealt with in this book do not have a metal–carbon bond, metal carboxylates are, nevertheless, useful staring materials for organometallic synthesis, partly because frequently they have useful non-aqueous solvent solubility.

This book represents the third in the series by the senior author, the others being concerned with metal alkoxides and β-diketonates and allied derivatives, respectively. Professor Mehrotra has researched actively in these three areas, and the present book is, therefore, to be welcomed. They are 5 chapters with the following titles: Introduction (15 pages), Synthesis of Metal Carboxylates (31 pages), Physicochemical Properties (110 pages), Structure and Bonding (161 pages), and Applications (5 pages). These titles are actually somewhat misleading. For example, Chapter 3 includes a section on decarboxylation reactions, while Chapter 4 includes a brief account of the preparation and properties of individual metal carboxylates.

There are 2158 references, although one or two of them are duplicated (e.g., 35 ≡ 236) and there are certainly some clerical errors. There does not seem to be a specific claim as to a cut-off point for the literature. The reviewer's impression is that this is probably 1978, although there are some citations to the literature of 1979, and even 1980. It is strange that for some quite well known journals chemical abstract citations are included, albeit rather indiscriminately, for example, to an article in Chem. Rev. (in ref. 236, although not in number 35, where incidentally the spellings and the order in which the authors are listed differ). There is a nine page subject index.

On the whole, the data are presented in the rather concise form which would be expected in, say, The Annual Reports of the Chemical Society, and there is

little critical comment. One has the impression that assertions made by authors in the literature are accepted without question. As a result, there are some curiosities; for example, when writing on page 48 of carboxylic acids, there is the phrase "the proton, owing to its small size, is located within the electron shell of one of the oxygen atoms (668, 669)." Other odd statements taken at random from the book are: "An interesting feature of metal carboxylates is their tendency to form metal—metal bonds,. . ", "Electron diffraction or microwave spectroscopy has been used for liquid or gaseous samples", and "Carboxylic acids have two resonance forms which give equivalent ions."

Despite these reservations, this is a useful book of reference.

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