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Book review

The Chemistry of Ruthenium; by E.A. Seddon and K.R. Seddon. Elsevier, Amsterdam, 1984, xi + 1374 pages, Dfl. 650.-. ISBN 0-444-42375-3.

This is a very large and important work which will not only be very useful to those researching in ruthenium chemistry, or contemplating using ruthenium compounds as reagents or catalysts, but also to those who teach chemistry.

The first chapter gives an account of the history of ruthenium chemistry, and the extraction of ruthenium and its general properties. Chapter 2 discusses the concepts and definitions of oxidation number and oxidation state and the so called MLX system of classification. Fortunately, the book is very well indexed and cross-indexed and one does not have to get the oxidation state 'right' before being able to look up the information on a particular compound, type of compound, method or physical technique.

Ruthenium exhibits well defined oxidation states from (VIII) to (0) and the next nine chapters deal with each of these oxidation states in turn. The Table of Contents for each of these chapters is particularly complete and easy to follow; for example, the organometallic chemistry of ruthenium(II) has sections on alkyl, aryl, acyl, ethene, allyl, diene, η^5 -cyclopentadienyl, arene, cycloheptadienyl, cycloheptatriene, cyclooctadienyl derivatives, and many others. Each section is further sub-divided by the nature of the other ligands: halide, hydride, carbonyl, phosphine etc. Chapter 12 is a short discussion of ruthenium(-II), Chapter 13 a long discussion of the extensive chemistry of ruthenium carbonyl clusters and Chapter 14 a similar discussion of the extensive chemistry of ruthenium nitrosyls.

The final chapter is a fascinating and critical discussion of the photophysics and photochemistry of tris(diimine)ruthenium(II) complexes.

The book is very well produced; the formulae, line drawings and crystal structures are particularly clearly presented. It is concisely written in good English and is strongly recommended by the Reviewer. There are 2497 references and over 700 addenda references.

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