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### Book review

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*Metal Alkoxides*; by D.C. Bradley, R.C. Mehrotra and D.P. Gaur, Academic Press, London, New York, San Francisco, 1978, viii + 411 pages, \$ 58, £ 23.

This excellent survey is somewhat overdue, but the authors explain reasonably in their preface that they were waiting for various structural analyses. The tiresome question, of course, is how long does one wait? Mysteries in science are perpetual. It was pleasant to read about indebtedness to the late Professor Wardlaw, again in the preface, as he started the resurgence of this fascinating part of chemistry.

The formulae are somewhat inconsistent: one reads  $C_2H_5$  and Et on the same page, for example.

After a brief historical introduction there are five chapters of very different lengths. The synthesis chapter is good but overlooks the fact that beryllium reacts smoothly with methanolic sodium methoxide (Bell, 1968), and the authors did not make it clear that phosphorus(III) chloride can react with alcohols in at least two ways, largely depending on the presence or absence of a relatively strong base. Experimental precautions are admirably described.

The chapter on physical properties is much longer (107 compared to 11 pages) and nearly comprehensive. Probably only an alkoxide enthusiast would refer, for example, to boron ethoxide rather than ethyl borate. There is an excellent discussion of the tetra-*t*-butoxides such as the brilliantly blue  $Cr(OBu-t)_4$ , and of the crystallographic studies of, for example, titanium alkoxides and various mixed alkoxides. It is fun to see the once discredited parachor surface again (p. 107–108).

The longest chapter deals with chemical properties and the authors wisely emphasize experimental difficulties such as sensitivity to hydrolysis. The chapter makes fascinating reading, and it is good to see references to unresolved problems.

The next two chapters are much shorter, dealing with double metal alkoxides and, the reviewer was pleased to see, industrial applications (very briefly). Unfortunately, Andersen's alkali metal beryllium alkoxides (1974) were missed: some of them undergo rather curious reactions.

The price of the book is, as all too common these days, outrageously high, otherwise it is very much to be recommended.

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