

### Book reviews

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*Gmelin Handbook of Inorganic Chemistry. 8th Edition. Silicon Supplement Volume B1.* Springer-Verlag, Berlin etc., 1982, xii + 259 pages, DM711.

The Gmelin-Institut has started on the revision of the volumes on silicon, and these will appear in three main groups (with sub-sections), Part A dealing with elemental silicon, Part B with compounds, and Part C with silicates. This first volume in the new series (written by A. Hengge, H. Keller-Rudek, D. Koschel, U. Krüerke and P. Merlet) is concerned with (1) silicon and the noble gases (a two line entry noting that argon is not adsorbed as a silicon filament at 300 K and pressures  $< 10^{-4}$  Torr), (2) compounds composed of silicon and hydrogen (230 pages), and (3) compounds containing both Si—H and Si—O bonds (29 pages). The relevant literature is comprehensively covered to the end of 1980, and there are a few references to 1981 publications. While the account is inevitably mainly one of report, there are occasional comments, and some patent claims are refreshingly questioned.

The first part of the book describes the adsorption and chemisorption of hydrogen on crystalline silicon and the formation of solid amorphous silicon—hydrogen products. The main part of the text then deals with  $\text{SiH}_4$ , linear and branched  $\text{S}_n\text{H}_{2n+2}$  compounds, and cyclic  $(\text{SiH}_2)_n$  species. The final section is concerned with compounds containing both Si—O and Si—H bonds, concluding with the interesting siloxene. No organometallic compounds are described, but organosilicon chemists will find much of relevance in these accounts of prototype systems.

As usual in this series the volume is very well produced, and, again as usual, the price per page strikingly high, though not unacceptably so in the light of the great amount of accurate information presented (I did, however, notice more small errors than I usually do with Gmelin volumes; e.g. on p. 252 'fluorescent' appears as 'flourescent', and 'silaethene' as 'silaethane'.)

The account is wholly in English. While this undoubtedly increases its usefulness, there is possibly a price to be paid. Errors such as the use of 'incomprehensively' in place of 'incomprehensibly' (p. 231) are no more than amusing. However, when siloxene is described (p. 254) as "very sensitive to oxidation (burns in the air) . . .", whereas some other accounts say that it ignites spontaneously in the air, I must wonder whether the latter is what the Gmelin authors really meant; the distinction is, after all, rather important!