Journal of Organometallic Chemistry, 268 (1984) C59—C60
Elsevier Sequoia S.A., Lausanne — Printed in The Netherlands

Book review

Gmelin Handbook of Inorganic Chemistry. 8th Edition. *F — Perfluorohalogenoorgano Compounds of the Main Group Elements. Supplement Volume 1. Compounds with Elements of Main Groups 1 to 5 (excluding N) and with S (partially)*, Springer-Verlag, Berlin etc., 1984, xii + 212 pages, DM 648. ISBN 3-540-93498-7.

This volume is the first of three Supplement Volumes which extend coverage of the perfluorohalogenoorgano compounds of the Main Group elements up to the end of 1981. (Perfluorohalogenoorgano groups are defined as those which contain at least one fluorine atom and whose remaining valencies are satisfied by other halogens.) The corresponding Main Volumes appeared in 1973—1975.

The volume is concerned with derivatives of Li and Na (15 pages), K and Cs (4 pages), Mg (7 pages), Ca (1 page), B (6 pages), Al (0.5 pages), Ga (no entry), In (0.5 pages), Th (5 pages), Si (9 pages), Ge (17 pages), Sn (4 pages), P (92 pages), As (16 pages), Sb (4 pages), Bi (1 page), S^{II} (37 pages). (Treatment of S^{II} compounds will be completed in Supplement Volume 2.) The large amount of work which has been done in the period 1973—1981 on phosphorus compounds is striking, and it is also noteworthy that while relatively little more was done on silicon compounds in a similar period, (following the initial intensive study of them in 1948—1973) the compounds of germanium received considerable attention. (There is actually somewhat less new material on some of the elements than might appear from the number of pages taken up by them, since compounds which were dealt with in the earlier volumes are listed again here, even when nothing new has been learned about them; this is a convenience for the reader, who does not have to search both sets of volumes to find whether a compound exists.)

As far as one can judge, the coverage is as complete as we have come to expect from this fine series. The presentation is slightly marred by errors or infelicities in the English; e.g. (i) "In the following it is given for the investigated reactions the molar ratio perbenzoic acid/thiocarbonyl and the yield of the products"; (ii) ". . .is interpreted on the basis of the HOMO—LUMO theory under consideration of the participation of the sulfur *d* orbitals"; (iii) ". . .halohydrins which cyclisize to. . .". The meaning is nowhere in doubt, however, and these minor defects attract attention only because the standard of production is otherwise so very high.

There are also, unusually, some small errors in nomenclature. Thus the names perfluoroalkylhalides and perfluorocalciumiodides appear as written here, i.e. as single words, whereas perfluoroalkylmagnesium halide appears correctly as two words, and $(C_6F_5)_3GeOH$ is named as a germanole, whereas it should be a germanol.

There is much of interest in this volume for Main Group organometallic

chemists (and even something for transition metal chemists in the sections on reactions of perfluorohalogenoorganomagnesium compounds, for example, with transition metal complexes). Research groups which have this invaluable Gmelin series available to them are at a considerable advantage.

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Corrigendum

Molybdenum and tungsten carbonyl complexes with macrocyclic thiaether ligands; by C.G. Young, J.A. Broomhead and C.J. Boreham (*J. Organomet. Chem.*, 260 (1984) 91—98).

Page 93, in Table 1, line 2: 518 s should be under δ (MCO).

Page 95, Table 2 should read:

TABLE 2

^1H and ^{13}C-$\{^1H\}$ NMR SPECTRA OF **1** AND **4**

Nucleus,	Complex	δ (ppm)	Assignment
^1H,	**1** (25°C)	2.08 pentuplet	CH_2-B
		complex multiplets at 2.31, 2.51, 2.79 2.93, 3.11, 3.25	CH_2
^1H,	**4**	1.7—3.5 m, br, 2.93 s	aliphatic CH_2
		3.81 s, 3.82 s	benzylic CH_2 (next to uncoordinated S)
		4.25 s, 4.46 s	benzylic CH_2 (next to coordinated S)
		7.26—7.70 m	CH and CH_2Cl_2
^{13}C,	**1** (25°C)	25.47, 26.21, 26.51, 30.11, 32.19, 33.95 35.34, 38.10, 44.35	CH_2
		223.14	CO
^{13}C,	**1** (−70°C)	24.53, 25.22, 25.89 29.50, 31.50, 31.71, 33.95, 34.47, 38.51, 43.95	CH_2
		223.09	CO
^{13}C,	**4**	29.94, 32.03, 32.47, 33.64, 34.16, 34.98, 35.80, 40.23, 45.54	CH_2
		128.50, 129.02, 129.51, 131.52, 134.77, 135.81	2° aromatic C
		134.77, 135.81	3° aromatic C
		204.70	CO