

Gmelin handbook of inorganic chemistry, 8th edition, F — *Perfluorohalogenoorgano Compounds of Main Group Elements, Supplement Volume 4: Heterocyclic Compounds of Nitrogen*, Springer-Verlag, Berlin, etc., 1988, xiii + 348 pages, DM1540. ISBN 3-540-93569-X.

This volume is, remarkably, the thirteenth that the Gmelin Institute has devoted to perfluorohalogenoorgano compounds of the main group elements, and the third to heterocyclic nitrogen compounds (the earlier volumes being Part 5 (1978) and Part 6 (1978), to which the volume under review is a supplement). It is an area of semantics to discuss whether these compounds (e.g. pentafluoropyridine) should be considered as inorganic or organic compounds: they evidently contain no C–H bonds, but their chemistry lies nevertheless in the traditional province of the organic chemist. Thus, although appearing in the Handbook of Inorganic Chemistry, this volume must be of prime interest to the organic chemist. Not that it is without interest to the coordination and organometallic chemist; it contains a wealth of potentially fascinating, but largely unexplored, ligands, which would show not only unusual coordination properties, but also display enhanced reactivity upon binding to a metal centre. This is a special volume, a book that would be impossible to scan without generating a host of exciting new ideas.

This volume is organized according to heterocyclic ring size, number of nitrogen atoms within the heterocyclic ring, and finally the number of other heteroatoms within the heterocyclic ring. Thus, the chapters logically and sequentially cover three-membered heterocycles (especially aziridines, oxaziridines, diazarines and diazaridines), four-membered heterocycles, five-membered heterocycles (including pyrrolidines, pyrroles, pyrazoles, imidazoles, triazoles, tetrazoles, etc.) and six-membered heterocycles (including pyridines, piperidines, pyridazines, pyrimidines, pyrazines, and triazines). These chapters are followed by short sections on polymeric triazines, heterocycles containing more than six atoms in the ring, and fused heterocycles, and the book concludes with an invaluable formula index (26 pages; U. Hettwer) for the compounds included in the volume, which greatly enhances its value.

The authors (A. Haas, D. Koschel and U. Niemann) have produced a comprehensive update (closing date: end of 1985) of the earlier volumes: writing in this no-man's-land between two disciplines cannot be an easy task, and they have performed it with apparent ease, making extensive use of tabulated data. There can be no doubt that this excellent volume should be in every academic and industrial chemistry library, and will be of interest to a much wider audience than normal for a typical volume of the Handbook (if such a thing exists). It is certainly a volume which will repay the time spent in examining it.

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