

Book review

Gmelin handbook of inorganic chemistry, 8th edition, *S — Sulfur–Nitrogen Compounds, Part 4: Compounds with Sulfur of Oxidation Number IV*, Springer-Verlag, Berlin, Heidelberg, New York, Tokyo, 1987, xvi + 272 pages, DM1260. ISBN 3-540-93553-3.

In 1985, the second volume of the Gmelin Handbook on sulfur (System No. 9) to be devoted to sulfur–nitrogen compounds was published: it was restricted to sulfur–nitrogen ring compounds $\{S_xN_y\}$ in which at least one sulfur atom can be regarded, in a limiting structure, as being in the +4 oxidation state. The third volume (1987) extended that coverage to include ring systems which contain one or two other types of atom in addition to sulfur and nitrogen, but for $S_xN_yC_z$ systems only described four- and five-membered rings (i.e. $x + y + z = 4$ or 5). The current volume (Part 4) extends this coverage to larger ring systems, and also includes

Table 1

Sulphur–nitrogen–carbon–element ring systems, $S_xN_yC_zE_n$ ($E = O$ or P), detailed in Part 4

x	y	z	n ($E = O$)	n ($E = P$)
Six-membered rings (108 pages)				
2	3	1		
2	2	2		
1	3	2		
1	2	3		
2	1	1	2	
1	1	3	1	
1	2	2	1	
1	2	1		2
Seven-membered rings (17 pages)				
3	3	1		
3	2	2		
2	3	2		
1	2	4		
1	2	3	1	
Eight-membered rings (20 pages)				
3	4	1		
4	2	2		
2	4	2		
1	2	5		
Nine-membered rings (10 pages)				
3	5	1		
1	2	6		

$S_xN_yC_zE_n$ (E = O or P) ring systems. The ring systems described are summarized in Table 1.

This volume is concerned exclusively with ring systems containing sulfur, nitrogen and carbon, thus giving it a specially broad appeal, to organic, to inorganic and even to theoretical chemists. However, as this is a handbook of *inorganic* chemistry, the compounds of this category have been restricted by excluding compounds containing a $S^{IV}-C$ bond in the ring. The largest category of compounds detailed are the thia- and dithia-triazines, closely followed by the thiadiazines.

The authors (N. Baumann, H.-J. Fachmann, B. Heibel, H. Keller-Rudek and A. Kubny) have performed a splendid task in compiling this volume. It is well written, and the great debt owed by the sulfur-nitrogen chemists to the crystallographers is very apparent. The chemistry described is absolutely fascinating, and the attraction of this intriguing field is obvious. I do not believe that any inorganic chemist could examine the amazing array of structural types described in this volume without feeling a rush of excitement.

This volume contains both a formula index (54 pages) and ring index (60 pages), for the combined contents of Part 3 and Part 4. This index greatly enhances the value of these volumes, and any purchaser of Part 3 will clearly require Part 4. The book meets the normal immaculate standards of production that one expects from the Gmelin Institute, and the excellent illustrations perfectly complement the text (literature closing date: 1984). No chemistry library can afford to be without it; no private individual can afford to purchase it.

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