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Book reviews

Gmelin Handbook of Inorganic and Organometallic Chemistry. 8th Edn. F. Perfluorohalogenoorgano Compounds of Main Group Elements. Supplement Vol. 6. Aliphatic and Aromatic Compounds of Nitrogen (continued), Springer-Verlag, Berlin, 1991. xiv + 283 pages, DM 1480. ISBN 3-540-93633-5

This supplement is concerned with aliphatic or aromatic perfluorohalogeno compounds of nitrogen bonded to halogens, S, Se, Te, P, B or metals or to a pseudohalogeno (CN, NC, NCO, NCS, NCN) or azaalkene group, or of nitrogen in a tertiary amino group. It provides accounts of such compounds first made since the appearance of the relevant Main Volumes (Parts 8 and 9) and additional information on compounds dealt with in those volumes.

The material is organized under the headings: perfluorohalogenoorgano nitrogen-halogen compounds; perfluorohalogenoorgano nitrogen-sulfur compounds; perfluorohalogenoorgano compounds with P–N, Se–N, Te–N, B–N, and metal–N bonds; perfluorohalogeno pseudohalides; perfluorohalogenoorgano nitrenes and azaalkenes; tertiary perfluorohalogenoorganoamines. (The section perhaps of most immediate interest to readers of this journal, *i.e.* on compounds containing nitrogen linked to metals or metalloids, occupies only 16 pages, with about half of those devoted to derivatives of phosphorus.) For each compound the method(s) of preparation, the physical properties, and chemical reactions are outlined, much of the data on physical properties appearing in tables.

The coverage is not as up-to-date as in some recent Gmelin volumes, systematic searching of the literature having ceased at the end of 1985, although there are some later references. The formula index refers to material not only in this volume but also that in the related Supplement Volume 5.

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Advances in Sonochemistry, Volume 2, T.J. Mason (Ed.), JAI Press, London, 1991, x + 322 pages, £54 (hardcover). ISBN 1-55938-267-8

The second volume in this annual series follows the example of the first in that it covers a wide range of the uses of ultrasound in chemistry. Volume 1 in the series contained Chapters on some of the now more familiar aspects of sonochemistry while this new volume has Chapters on some of the less obvious, but nonetheless useful and important, aspects of the field.

The contributors and their contributions are as follows: P. Kruus, Sonochemical Initiation of Polymerization; P. Riesz, Free Radical Generation by Ultrasound in Aqueous Solutions of Volatile and Non-Volatile Solutes; R.A. Pethrick, Ultrasonic

Studies of Polymeric Solids and Solutions; O.V. Abramov, The Action of Ultrasound on Solidifying Metals; N. Senapati, Ultrasound in Chemical Processing; T. Ando and T. Kimura, Ultrasonic Organic Synthesis Involving Non-Metal Solids; M.A. Margulis and N.A. Maximenko, The Influence of Ultrasound on Oscillating Reactions; and C.J. Schram, The Manipulation of Particles in an Acoustic Field. As in the inaugural volume the authors are all experts in their field and are drawn from a good range of countries.

Readers of this Journal are likely to regard relatively few of these Chapters of direct relevance to their work but they will find that all repay reading to gain an appreciation of the very wide range of situations in which ultrasound has been found to have beneficial effects. The Chapter concerned with organic synthesis involving use of non-metal solids (such as alkali metal salts, alumina, and metal salts supported on inorganic solids) will probably be of greatest interest as many of the reagents used are also of use in organometallic and inorganic syntheses. The discussion given about the apparent relevance of the melting point of solids to the effectiveness of ultrasonic irradiation should provide synthesis chemists (particularly those who have unsuccessfully applied ultrasound to their own reactions) with much food for thought. The two Chapters about the effects of ultrasound in polymer systems will also be applicable to those interested in organometallic or inorganic polymers. The contribution dealing with the physical basis for the formation of free radicals in solutions will also be useful to those seeking to understand why some reactions seem to be particularly susceptible to ultrasonic irradiation and others relatively unaffected.

This volume is again generally very well produced, although some of the photographs reproduced, for example those on pages 202 and 205, are of rather poor quality and show very little of the detail of interest. Finally, it is pleasing to see that despite there being an approximate 10% increase in length from Volume 1 the price has remained the same.

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Announcement

The Xth International Symposium on Organosilicon Chemistry will be held in Poznań, Poland on August 15–20, 1993. Details may be obtained from: Professor B. Marciniec, Faculty of Chemistry, Adam Mickiewicz University, Grunwaldzka 6, 60-780 Poznań, Poland.