Hypervalent Iodine Chemistry. Preparation, Structure, and Synthetic Applications of Polyvalent Iodine Compounds

Description: Hypervalent Iodine Chemistry is the first comprehensive text covering all of the main aspects of the chemistry of organic and inorganic polyvalent iodine compounds, including applications in chemical research, medicine, and industry.

Providing a comprehensive overview of the preparation, properties, and synthetic applications of this important class of reagents, the text is presented in the following way:

- The introductory chapter provides a historical background and describes the general classification of iodine compounds, nomenclature, hypervalent bonding, structural features, and the principles of reactivity of polyvalent iodine compounds.
- Chapter 2 gives a detailed description of the preparative methods and structural features of all known classes of organic and inorganic derivatives of polyvalent iodine.
- Chapter 3, the key chapter of the book, deals with the many applications of hypervalent iodine reagents in organic synthesis.
- Chapter 4 describes the most recent achievements in hypervalent iodine catalysis.
- Chapter 5 deals with recyclable polymer-supported and nonpolymeric hypervalent iodine reagents.
- Chapter 6 covers the green reactions of hypervalent iodine reagents under solvent-free conditions or in aqueous solutions.
- The final chapter provides an overview of the important practical applications of polyvalent iodine compounds in medicine and industry.

This book is aimed at all chemists interested in iodine compounds, including academic and industrial researchers in inorganic, organic, physical, medicinal, and biological chemistry. It will be particularly useful to synthetic organic and inorganic chemists, including graduate and advanced undergraduate students. It comprehensively covers the green chemistry aspects of hypervalent iodine chemistry, making it especially useful for industrial chemists.

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