

Yu. P. Kitaev (editor)

THE CHEMISTRY OF HYDRAZONES*

Reviewed by I. S. Berdinskii

This book is a collection of review papers devoted to individual problems in the chemistry of hydrazones and can be regarded as a supplement to the monograph by Yu. P. Kitaev and B. I. Buzykin entitled *Hydrazones* (Nauka, 1974). In addition to the results of research conducted by the authors in the A. E. Arbuzov Institute of Organic and Physical Chemistry of the Kazan Branch of the Academy of Sciences of the USSR, a large amount of literature data are correlated in the collection.

The collection begins with the paper entitled "Electronic structures of hydrazones" (V. V. Zverev, M. S. Él'man, and Yu. P. Kitaev), which correlates the data from photoelectronic and UV spectroscopy, as well as from quantum mechanical calculations. The results of experimental and theoretical studies of the basicities and protonation centers of hydrazones are discussed in a paper entitled "Basicities of hydrazones" (V. V. Zverev, T. N. Py-laeva, and L. V. Ermolaeva). In particular, it was established that the energies of protonation of imine and amine nitrogen atoms differ only slightly. A paper entitled "Hydrazones in coordination chemistry" (T. V. Troepol'skaya and E. N. Munin) correlates the numerous studies of recent years. In particular, it is shown that the presence of additional electron-donor substituents in the hydrazones is necessary for the formation of stable complexes.

Methods for the preparation of sulfonylhydrazones and their structures, and physical and chemical properties are described in a paper entitled "Sulfonylhydrazones" by F. Kh. Izmailova, B. I. Buzykin, and R. Kh. Vasil'eva. It should be emphasized that this group of compounds is finding wide application in the synthesis of heterocycles. In a paper entitled "Azines that contain a characteristic group" (B. I. Buzykin and G. D. Lezhnina) a great deal of attention is directed to azines that include heterocyclic residues and to the transformations involved in the formation of heterorings. A paper by B. I. Buzykin, N. G. Gazetdinova, and L. P. Sysoeva is devoted to hydrazidines — compounds that contain a hydrazono grouping and a hydrazine residue, which in many respects determines the properties of these compounds, including their conversion to tetrazole and 1,2,4-triazole derivatives and other heterocycles, attached to the same carbon atom. The paper by B. I. Buzykin that concludes the collection examines formazans as one type of hydrazone. The book may be useful for all those who are engaged in research on hydrazine derivatives, as well as heterocyclic compounds in general,

*Nauka, 1977.

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