The Chemistry of Anilines, Parts 1 & 2, Z. Rappoport (Series Editor), Wiley: Chichester, **2007**, hardcover, 1180 pp, € 787.50 / US$ 1050 / £ 525, ISBN 978-0-470-87171-3

Updated volumes in the Patai series: Anilines

Since its discovery in 1826, aniline has played a significant role in the development of industrial chemistry as well as academic research. Aromatic amines and aniline derivatives belong to the most important building blocks in chemistry. The production of dyes and pigments was the initial field of its applications, whereas currently major amounts of anilines are used in the preparation of isocyanates, rubber processing chemicals, agro chemicals and pharmaceuticals. Saul Patai, who deceased in 1998, founded a comprehensive series of books about the chemistry of functional groups. These comprehensive books by Patai belong to the standard inventory of scientific libraries. Zvi Rappoport proceeded as editor with an updated edition of the Patai series and two volumes recently appeared dealing with the chemistry of anilines.

Zvi Rappoport organized several well-known scientists in their respective fields into writing contributions, covering the literature mostly up to the end 2005. From the arrangement of the 17 individual chapters it is difficult to find an outlining concept of the book. The first part commences with a highly recommended historical survey on aniline which reads like the history of industrial chemistry. Many big chemical companies – that still exist – have their origin in the production or conversion of anilines. The following two chapters are devoted to theoretical and structural aspects of anilines. The subsequent contribution reviewing the thermochemistry of these particular compounds fits in perfectly. The next two surveys treat analytical aspects of anilines in the field of mass spectrometry and NMR spectroscopy. Due to the fact that the amino function has strong donor capabilities, substituted anilines can serve as solvatochromic probes. A concise report on this particular topic is included. The simple anilines are weak partners for hydrogen bonding but together with other strong donors or acceptors, a definite interaction is observable. The given survey is comprehensive and treats various media and different states. A chapter entitled 'synthesis of anilines' treats almost exclusively the metal-catalyzed arylation of nitrogen nucleophiles. The reduction of nitrobenzenes is covered in less than one page! Unfortunately, the cathodic reduction in acidic media is not mentioned. The electrochemical pathway results selectively in *N*-phenylhydroxylamines which rearrange in situ to 4-hydroxyanilines. Another short chapter about anilines as nucleophiles follows. The content is largely redundant and found in other sections as well.

The second part of the book starts with a comprehensive collection of rearrangements of aniline and its derivatives. The survey is organized by the different classes of starting materials. The next chapter is entitled 'analytical aspects of aromatic amines' and focuses mostly on the trace detection and identification of such compounds. A large section on the technical production of anilines and their conversion into further products is presented. The sequence of synthetically oriented chapters is interrupted. and a review follows on spectral properties of anilines and photochemistry. Since many workers were exposed during the manufacturing processes of aniline and derivatives, representative studies on their carcinogenic properties are available and led to legislative regulations on restricted manufacture and use. A chapter on the electrochemistry of anilines follows, dealing mainly with the anodic oligomerization of such substrates. The use of triarylamines as mediators in electrochemical processes is not treated. The book is closed by a unique chapter devoted to proton sponges.

Although the index consists of about 45 pages, the reader will have to put some effort into finding specific topics. It seems that the individual chapters are represented with different efficiencies by the index. The schemes are clearly arranged and the numbering is systematic in most of the individual chapters. The number of typos in the written part and the schemes is on a tolerable level. Chemical mistakes are rare, and even for the inexperienced reader obvious (e.g. pages 35&36). The present monograph can of course not cover all areas – consequently, the editor regrets the absence of several contributions dealing, for example, with the acidity of anilines and radical chemistry. However, with about 3600 references and many citations leading to existing reviews and further reading, this is an indispensable reference book that should find its place in most scientific libraries. Unfortunately, for synthetically oriented chemists, this book provides only some preparative aspects. For a broader scope of synthetic methods, the reader will be forced to visit other reference systems like Science of Synthesis.

Siegfried R. Waldvogel, Kekulé-Institut für Organische Chemie und Biochemie, Universität Bonn, Germany

SYNTHESIS 2008, No. 6, pp 998–998
Advanced online publication: 11.03.2008
Art ID: B10608SS