Organic Process Research & Development **2003**, *7*, 121–122

Additions & Corrections

A New Route for the Preparation of 5-Hydroxyisophthalic Acid

Mark Gelmont, Oded Arad, and Jakob Oren
(*Org. Process Res. Dev.* **2002**, 6, 591–596).

We mistakenly omitted the name of Dr. Oded Arad as an author of this paper.

His current address is as follows: Chemagis Israel Ltd., 3 Hashlosha Str, POB 9091, Tel Aviv 61 090, Israel.

OP0200930

10.1021/op0200930
Published on Web 11/20/2002

Book Reviews

Advanced Drying Technologies. By T. Kudra and A. S. Mujumdar. Marcel Dekker: New York. 2002. 459 pp. $175.00. ISBN 0-8247-9618-7.

The material of the five parts of the book is subdivided into 31 chapters. Each chapter deals with a specific drying mode. There are 24 pages with references.

Drying is a relatively important unit operation. In the majority of cases, water is evaporated. Anually, 2×10^{10} kg of water was evaporated in drying operations in Great Britain during the few years before 1990. This corresponds with a water height of 100 m on 40 soccer fields. Conventionally, convective drying (in, e.g., flash dryers) and contact drying are distinguished. In the book, less well-known techniques such as steam drying and combined filtration and drying are discussed. This is useful. The results of research carried out worldwide are reviewed. However, the reviews are not optimum as they should have been more critical. On reading the book, the following expression was remembered: "I had little time, so I wrote my friend a long letter". The lack of critical attitude has led to mistakes and to inaccuracies/duplications. Several examples of both categories will be given.

It is stated on page 84: "Superheated steam has heat transfer properties superior to air at the same temperature". This statement is correct as far as the heat transfer from steam to wet particles is concerned. However, it is not correct for the heat transfer from a wall to steam. The latter heat transfer is comparable for air and steam. Concerning continuous steam drying on a large scale, the heart of the matter is that heat has to be transferred to a gas (steam) from a metal wall. The heat transfer wall/gas is notoriously poor, leading to very large heat transfer exchanging areas (thousands of square meters) for the evaporation of, for example, 35 metric tonnes of water per hour. Thus, the investment is high. This situation is not explained. Equation 4.3 on page 35 gives wrong results for $X = 1$. The dimensions of eq 4.4 are incorrect.

Concerning the second category (inaccuracies/duplications), the fact that steam drying offers a bonus vis-à-vis process safety (no oxygen, and thus, no fires/explosions) is mentioned on pages 82, 87, 96, and 98. The company Escher Wyss mentioned on page 92 had changed its name in 1995. On page 241, part of the Mollier diagram is reproduced in Figure 15.1. The ordinate of this diagram represents temperature and not enthalpy.

On summing up, it is a merit of the book that it offers a review of less well-known drying techniques and drying techniques that are being explored. Making an inventory of the status quo concerning drying is useful, especially vis-à-vis the world energy situation. The extensive list of references provides in itself an opening to options. The authors are advised to review the material more critically and to make it more compact. Potential readers are advised to use the book cautiously.

Kees van 't Land
Cort van der Lindenlaan 8,
7521 AS Enschede, The Netherlands

OP010102P

10.1021/op010102p

Pharmaceutical Chemistry: Therapeutic Aspects of Biomacromolecules. By Christine M. Bladon. John Wiley & Sons Ltd.: Chichester, England. Hardback £65.00. ISBN 0-471-49636-7. Paperback £24.95. ISBN 0-471-49637-5.

This book is based on a series of lectures that the author has given to final-year students in a Pharmaceutical Chemistry course. Its aim is to present a range of biomedical topics in an interesting and readily understandable way for students with a chemistry or biochemistry background. Following its introduction, the book is divided into five chapters: endogenous peptides and proteins, modification of endogenous peptides and proteins, the immune system, oligonucleotides, and oligosaccharides. The text of each is very well written and accompanied by clear figures and schemes. There is also good consistency in the coverage and depth of each topic, and the author provides illustrative examples of biomacromolecules that are currently in therapeutic use.

To support the main text there are three appendices providing background biochemistry of amino acids and peptides, oligonucleotides, and carbohydrates together with a well-composed glossary covering specialized biomedical terms which will undoubtedly prove very helpful to the less familiar reader. Of particular note is a selection of books, recent reviews, and up-to-date primary literature references (including a number of 2000 and 2001 citations) cited for further reading at the end of each chapter. Given the stimulating way the different molecular classes are presented, the reader's appetite should be whetted to delve into these citations.

I believe that this book meets its aim in providing a very readable text and one from which the reader should come away with a good appreciation of the subjects covered. It should have a wide readership not only as a textbook for those taking undergraduate and postgraduate courses on pharmaceutical/medicinal chemistry but also for all those starting careers in the biotechnology or pharmaceutical industry. Given the detail included, the text, figures, and schemes are remarkably free of errors.

In summary, this is an excellent book, and I recommend that it be carried by university chemistry/biochemistry libraries and by industry libraries. At a price of £24.95 for the paperback edition, it is very good value for money and should be affordable for an individual purchase.

David Scopes

Oxford GlycoSciences (UK) Ltd., UK

OP020071D

Quality (Pharmaceutical Engineering Series). By Kate McCormick. Butterworth Heinemann: Woburn, MA. 2002. 275 pp. £150. ISBN 0-7506-5113-X.

Kate McCormack has here provided a valuable and very readable overview of quality management in the pharmaceutical industry. It is written mainly from the perspective of manufacturing finished pharmaceuticals, but chemists concerned with Active Pharmaceutical Ingredients (APIs) will also find it interesting and relevant. It discusses quality not just from the regulatory perspective but also in terms of quality improvement and the achievement of world-class manufacturing. The regulatory discussions focus mainly on the requirements in the European Union, but there are also references to the situation in other parts of the world—especially in the United States, but also Australia, Canada, South Africa, former Soviet-block countries, and the Arab world. Also discussed is the role of international bodies such as WHO, PIC/S, and ICH. The first chapter gives an overview of all the regulatory frameworks, focusing both on the historical context and the "quality life cycle", discussing best practices in laboratories (GLP), the clinic (GCP), manufacturing (GMP), and distribution (GDP).

Chemists will be mainly interested in the chapters on Good Manufacturing Practice, Quality Management, Technology Transfer, Calibration, and Inspections, the latter chapter giving useful advice both on conducting site audits and on undergoing inspections from regulatory authorities and customers. Additionally, the chapters on quality systems (including the ISO 9000 standards), the cost of quality, pharmaceutical microbiology, pharmaceutical water systems, and quality improvement programmes provide much valuable background information. Many chapters are illustrated with useful case studies—some from the literature, some from the author's personal experience.

I have only noticed one error—in the discussion on Validation (page 82), "prospective" and "concurrent" are suggested as sequential phases of the programme, referring to studies carried out during the development and normal production phases, respectively. In contrast, the ICH guidelines on API manufacturing (Q7A) define these as alternative approaches to validation, the distinction being whether the product is commercially distributed before the validation is complete.

This volume provides much useful information in a very concise format. It therefore goes straight onto my shortlist of recommended reading for chemists interested in GMP. However, given its hefty price tag, it is probably one for the company library rather than the individual scientist's bookshelf.

Derek Robinson

OP020083Z

10.1021/op020071d CCC: $25.00
Published on Web 11/20/2002