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European Journal of Pharmaceutics and Biopharmaceutics 45 (1998) 207–208

European Journal of Pharmaceutics and Biopharmaceutics

Book reviews

Applications of Chitin and Chitosan
M.F.A. Goosen (Editor), Technomic, Basel, Switzerland, 1991. 336 pages. ISBN 1-56676-449-1

Chitins and chitosans are naturally occurring biodegradable biopolymers which, amongst other natural applications, are attractive materials for preparing drug carriers. This book is intended to provide an examination of the state-of-the-art research in these materials. Indeed, the editor stresses that the book strongly addresses their applications in biomedicine, biopharmacy, biochemistry, etc. Two initial background chapters deal with the structures and properties of chitin and chitosan. The remainder of the book is divided into five sections, each covering a specific application of these materials. Thus Part II provides more detailed studies of the structure and general properties of chitin and chitosans. In Part III, the use of these materials in food and agriculture is described. Medical and biotechnological applications are fairly briefly described in Part IV. Their use in textiles and polymers is followed by a concluding section showing their use in waste-water treatment.

As is evident, this is a very broad based book giving an extensive inside picture into the use of chitins and chitosans in numerous fields. Apart from the chapters dealing with medicine and biotechnology, I also found this book in general, very interesting reading. Take, for example, the fascinating chapter entitled 'Inhibition of molting in chewing insect pests', beautifully written by Maria Bade from MIT. For a non-zoologist like me, the idea of inhibiting the molting of insects to control their numbers is a fascinating idea. Turning to pharmaceutical aspects, however, the book contains only two chapters about applications of chitin and chitosan for microparticles in drug delivery. Both are very limited in extent and to be quite honest present no particularly exciting results.

If you are interested in chitins and chitosans and their structures and properties, this is a good book for you. If you are primarily interested in pharmaceutical applications, then stay with research articles in the literature.

Professor G. Lee
Cauertsrasse 4
D-91052 Erlangen
Germany

PII S0939-6411(97)00147-1

Good Pharmaceutical Freeze-Drying Practice
Peter Cameron (Editor), Interpharm, Buffalo Grove, IL, USA, 1996. 350 pages. $184.00. ISBN 1-57491-031-0

For some reason pharmacists in industry still tend to throw up their hands in dispair when confronted with the necessity of freeze-drying a product. If we go back some 20 years or so, this reaction would have been justifiable. Most of the scientific information then about freeze-drying was very qualitative. What exactly happens to a product during the process was still, in many ways, a bit of a mystery. Since than, however, there has been a lot of good basic research concerned with the physics of freeze-drying. A browse through chemical abstracts looking at names such as Pikal, Nail and Franks shows one just how much work of quality has been done in this direction. Today, though, the industrial pharmacist has another reason for throwing up his hands at the mention of freeze-drying. Although he should now know how the process works on a scientific level, he is confronted with the complexity of actually selecting and operating a freeze-drying machine. This book is intended to help. As the editor says in the preface, 'he can't press the buttons for you', but the book can help the operation and control of freeze-drying.

After an introductory chapter describing briefly the process of freeze-drying, Chapter 2 gives a useful and detailed description of the design of freeze-dryers. The following chapter discusses the tricky problems of freeze-dryer instrumentation and control. Chapters 4 and 5 discuss regulatory issues from the European and American perspective and should, perhaps, have been placed at the end of the

book, as they rather tend to disrupt the flow of the text. Thus, in Chapter 6 we find a succinct description of freeze-dryer sterilisation, followed by Chapter 7 concerning leak rate testing, Chapter 8 about filter integrity testing and Chapter 9 about the validation of freeze-dryers. In my opinion Chapter 10 entitled 'cycle optimisation and process transfer', should have been the most important in the book. However, it is disappointing and gives insufficient detail regarding process optimisation without a single example or result. The book's last chapter about CFC replacement relates the interesting tale of the rise and fall of refrigerants.

Altogether a useful book describing the machinery of freeze-drying, although the numerous chapters by a single author from one particular company lead one to the thought that this may not be the whole picture. Disappointingly weak on cycle optimisation, where questions such as the determination of the end-point of primary drying are vital issues in pharmaceutical freeze-drying. I give the book a partial recommendation. I am pleased to have it in our department library, but I don't think I would have purchased it.

Professor G. Lee
Cauerstrasse 4,
D-91052 Erlangen,
Germany

PII S0939-6411(97)00146-X