



Delivery System Handbook for Personal Care and Cosmetic Products

Technology, Applications, and Formulations

Edited by Meyer R. Rosen

Book Review by

Johann W. Wiechers, Trevor G. Blease and J. Chris Dederen

No, it is not your usual book, this Delivery System Handbook and you need to know quite a bit of detail to understand all the thinking that went into this first volume of a new series of books on cosmetic science. The three of us all read sections of the book and ended up with four terms that can describe it: complete, practical, a technology showcase and personal. And with that, we will have to do some explaining as it is probably the first time that you read the word personal in a book review. In order to get to the deeper meaning of this book, we phoned the editor Meyer Rosen in the New York office of his consulting firm, Interactive Consulting, Inc. (www.chemicalconsult.com) to get to the bottom of this book. But first some facts: Meyer R. Rosen, FRSC, FACFE is to be applauded in undertaking this ambitious project conceived as a vehicle for supplier companies to showcase their technology and products. The volume runs to over 1,000 pages and weighs in at over 2.5 kg – stretching the definition of »Handbook« to the limit. It is well produced, clearly laid out and contains a remarkably small number of typographical errors.

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Meyer, you wanted this Handbook to be different from anything else that you will find on the shelves. We think you have succeeded quite well as it is different in many ways. What

was your vision for this book when you invited cosmetic scientists to contribute?

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 I am delighted to hear that you did notice that it is different from anything else available on the market right now. That means that I have been successful. Let me start by saying that this book was not written to lay out the scientific principles of skin delivery and – almost as an addendum – discuss some delivery systems. No, I wanted to design a book in which I purposely created a safe space for each company and author so they could describe their technology in depth and applications for it, while at the same time, not having to worry about comparisons with so many other technologies. Such comparisons, in my design, were best left for the internal discoveries of clever researchers charged with the responsibility of finding the best delivery system for their formulated products based on a sound foundation of knowing what types of delivery systems were actually available.

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So, that explains very well why the book indeed feels like a technology showcase. We personally missed the critical evaluation of the technology in some chapters, but with that objective, to showcase your technology it is understandable. It also looks pretty complete to us. There is hardly a skin delivery tech-

nology that you cannot find in this book. How did you manage to achieve that?

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 I did contact over 150 companies to contribute over the four years it took me to compile this book. I am proud to say that at the end, I was able to collect the technology and critical thinking of 80 authors, from 48 companies, five universities, three consultants and nine countries. There are 45 chapters, each of which represents a different view of the subject at hand. They have been grouped in 16 subject sections: Introduction, Skin Fundamentals, Crossing the Barrier, Encapsulation, Liposomes, Particles, Emulsions, Foams, Structured Systems, Silicones, Starch-Based Systems, Activated Delivery Systems, Substrate-Based Systems, Specific Ingredient Delivery, Efficacy and Safety, and Marketing by Design and Advertising Analysis. That is pretty complete, I would say, but allow me to ask what you did manage to find that was not covered, so that I can ensure it will be in a later edition...

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OK, if you ask for it. We did not see ethosomes as described by Prof. Elka Touitou from the Hebrew University in Israel, nor did we see spray drying being covered in the encapsulation section despite having 50% market share according to the section's introductory chapter. Likewise, cyclodextrin molecular



Meyer R. Rosen



Johann W. Wiechers

encapsulate technology also seems somewhat under-represented...

Fair point. I would have asked *Prof. Touitou* had I known of her and her work, and the fact that spray drying was not extensively covered in the book may be a consequence of the focus of the book on »cutting edge products«, and may prevent the reader from obtaining an unbalanced view of the technology options open to formulators. Your comment on cyclodextrin molecular encapsulate technology is a typical example of what I describe in the Introduction; that there were some subjects that never got into the book because of committed individuals busy schedules and business demands.

These are minor points and you will not easily find a more complete book on the subject of cosmetic delivery systems than this one. But I feel I have to address one other point: there is some overlap between chapters in this book, for example, coascervation is introduced at least 5 times! Is this an omission or also a consequence of your philosophy for the book?

I wanted to have each type of delivery system described separately and we also know that some of the same fundamental concepts apply across several delivery systems. Some overlap is therefore unavoidable and with my promise to authors that they would have the opportunity to

present their technology, in depth, and delivery system products that evolved from their efforts, I could not do anything about that. But when is the last time that you read a whole science book from cover to cover? I therefore do not think that this is a real problem to the practical use of this book.

That brings me nicely to another keyword to describe this book: practical. Why so much focus on that?

Again, this comes from the philosophy of the book. If you describe the technology of your systems and show practical examples of what this technology can do, it automatically becomes practical. While the scientific part of us cries out that the »specialized section« of the book has the disadvantage that most delivery systems discussed are not critically compared to alternative technologies, it also goes to the heart of the matter of the unusual mind set and goal that I have designed into his book. As I mention in the beginning of the book, reading its various chapters will be like being blindfolded and feeling the leg, trunk or side of an elephant instead of having seen the whole animal. Similarly, I have purposely asked my authors to describe their »parts« of the delivery system world, but the comparison of these parts is best left to the individual's corporate development of unique products. This is based on the knowledge that knowing »each part of the elephant« gives the formulator a practical head start in what to test in order to make the comparisons that will eventually result in a successful commercial product.

Then the last keyword that we identified to describe the book: personal. It is not often that you use this word to describe a scientific book. But there are clearly a couple of things in this book that you will not find in other volumes such as the Mind Maps®, but also your introduction is very personal. It describes your experience as an Editor and how you see the needs of the skin delivery world. Can you give some examples and tell us why you did do things this way?

First of all, I must admit to be glad that you

do notice the difference. I spent a considerable time on providing the reader with Mind Maps® of each chapter. These maps are graphical displays of each chapter's Table of Contents that will help the reader to rapidly capture, consider, and retain the ideas and information presented. You will find these useful maps throughout the book for quick reference. Apart from these Mind Maps®, the book also contains some other interesting format innovations. The inclusion of the function of each ingredient was done to provide welcome clarity in the example formulations that conclude each chapter. Contributors were asked to provide a description of their »Eureka moment«. Unsurprisingly, and in line with the famous story of Archimedes of how he discovered the principle of buoyancy, some were more worth getting out of the bath for than others, but at their best they are fascinating, e.g., the story of Coletica's transformation from the leather industry to a leading position in the encapsulation of Personal Care active ingredients and pharmaceutical drugs. But the personal element, which was inspired by the unusual philosophy of the book and therefore required explanation, will also help the reader to feel comfortable, a feeling you seldom get from a scientific book.

One last question. This book is very big. Why did you not go for a smaller size or two books as you almost need a wheelbarrow to carry the thing around! Not very handy for a frequent traveler that wants to take your book with him or her during his or her travels...

That also has a little story. We looked into smaller sizes than the letter size currently used, but this made the Mind Maps® illegible. I simply could not accept that. We looked into a single column version and into two volumes to reduce its size. For the comfort of the reader, we would have preferred two volumes that can be hand-held rather than this heavy single letter-sized volume. But the single column version made it very tough to read whereas the Publisher really wanted a single book that contained all skin delivery systems. And then there was the issue of where to make the split? So, eventually, we opted for a single big book.

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OK, it is time for us to stop asking Editor Meyer Rosen questions about the book and start speaking for ourselves, although many things have already been discussed and explained.

You only have to read the introduction of the book to realize that this is not your usual book. Let us give you a few examples. Meyer Rosen indicates that this book is the first of a new series of »*Breakthroughs in Personal Care and Cosmetic Technology*« and suggests that there are many more to come. This series will provide practical information, but in a larger context, the volumes will be designed to expand current awareness of technology-push and market-pull forces. Further books in the Series are planned in the areas of fermentation processes, biocides, emulsifying agents, surfactants, rheological behavior, naturals and botanical, fragrances, bioengineering, cosmetics, etc., etc.

There is only little theory but the knowledge can also be very easily applied. This is due to the fact that Meyer Rosen approached nearly every supplier involved in cosmetic delivery systems and let them speak about their products. This guarantees completeness and easy applicability but bears the risk that the authors sing the praises of their own technology without critically comparing it to competing technologies.

So, in a nutshell, this book is very complete and provides very useful information on what a delivery system can do, but the reader has to find out for him or herself in the context of the formulated product and application they are each working on what the technology being discussed can not do. The policy of inviting individual contributions inevitably gives a 'conference proceedings' feel to the book. There is some duplication between chapters for which the reasons are already given above. Cross referencing between chapters is absent which would also give the reader a valuable lifeline through the trademark jungle when confronted with statements such as 'Dispersomes™ are an example of a double emulsion co-formulated with Nanosomes™ and Dispersicles™' (p. 314).

Contributors vary in meeting the request

of the editor not to submit a technical advertisement and to bring the whole package together for readers. In some cases the technology disclosure description is very superficial. The scarcity of *critical* techno-commercial analysis may leave the reader/formulator feeling faced with a bewildering choice of competing options with uncertain commercial status. As we have obviously stated in the past (as Meyer is quoting one of us on page 8), »it is important to realize where we are delivering to (in skin)«, and for some authors, delivering money into their (company's) pockets is equally important as delivering your active into the skin. Provided the reader does keep that in mind and reads whole sections rather than individual chapters to get to the overall »Truth on Skin Delivery«, (s)he will find this book extremely useful.

The volume does not quite fulfill its lofty vision of 'serving as a foundation text of training and development in this field for years to come'. However, it is nevertheless an exceptionally useful, »must-have« volume for formulators' (strengthened!) shelves. It certainly meets Meyer Rosen's description in the preface of 'representing a beginning to the process of bringing order to this field and representing an opportunity for future contributors in later editions'. Reading such a diverse opus cannot fail to stimulate novel thoughts and ideas and thus to advance progress in this burgeoning technology field. To prevent future editions of this work becoming even more voluminous, a tighter focus could be applied. A chapter on oil thickening, whilst an excellent description of the technology, has tenuous connection with 'delivery systems' and could be safely omitted.

The book is most useful for an audience that needs to practically deliver an active ingredient, cosmeceutical or drug into the skin, although university professors and marketers will also find it useful because of its completeness. It might take a decade before it is outdated. But if you are trying to understand the underlying scientific principles of skin delivery and penetration, quite separately from understanding the many types of commercially available delivery systems in existence today, you should have sufficient patience as this information is there, but it is spread-out over the whole book. For the theoretical

aspects of skin penetration we have seen many other and better books, but for the truly practical aspects of cosmetic skin delivery systems, there is only one, this one! And if you are stuck after having read the book, you can still approach the authors or Meyer Rosen directly via the e-mail addresses provided. As we said, the book is a truly complete, practical, and purposely non-comparative work designed to provide in-depth information about the delivery systems available, their applications and working formulations, with a very personal introduction that you should not forget to read as this will help you to use this book to its full potential. Enjoy it!

Purchase details

Meyer R. Rosen (editor), »Delivery System Handbook for Personal Care and Cosmetic Products: Technology, Applications, and Formulations«, William Andrew, Inc., Norwich, NY, USA, 2005, ISBN 0-8155-1504-9 (0-8155). Price: US\$ 395.00.

For further details and order details, see

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