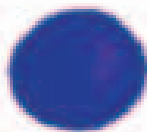
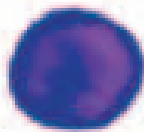
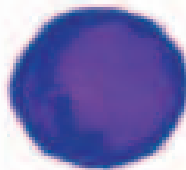
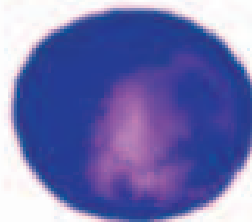
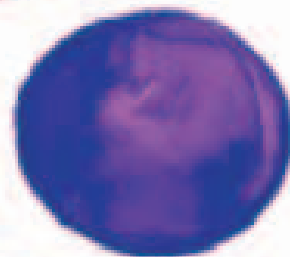
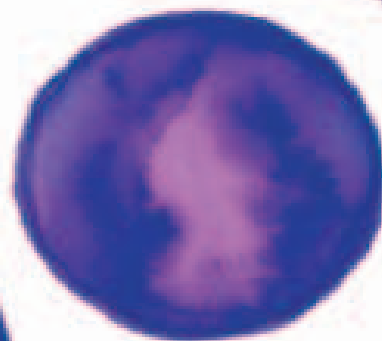


Handbook of Cosmetic Science and Technology

edited by

André O. Barel
Marc Paye
Howard I. Maibach



Handbook of Cosmetic Science and Technology

edited by

André O. Barel

*Free University of Brussels
Brussels, Belgium*

Marc Paye

*Colgate-Palmolive Research and Development, Inc.
Milmort, Belgium*

Howard I. Maibach

*University of California at San Francisco School of Medicine
San Francisco, California*



MARCEL DEKKER, INC.

NEW YORK • BASEL

Copyright © 2001 by Marcel Dekker, Inc. All Rights Reserved.

ISBN: 0-8247-0292-1

This book is printed on acid-free paper.

Headquarters

Marcel Dekker, Inc.
270 Madison Avenue, New York, NY 10016
tel: 212-696-9000; fax: 212-685-4540

Eastern Hemisphere Distribution

Marcel Dekker AG
Hutgasse 4, Postfach 812, CH-4001 Basel, Switzerland
tel: 41-61-261-8482; fax: 41-61-261-8896

World Wide Web

<http://www.dekker.com>

The publisher offers discounts on this book when ordered in bulk quantities. For more information, write to Special Sales/Professional Marketing at the headquarters address above.

Copyright © 2001 by Marcel Dekker, Inc. All Rights Reserved.

Neither this book nor any part may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, microfilming, and recording, or by any information storage and retrieval system, without permission in writing from the publisher.

Current printing (last digit):

10 9 8 7 6 5 4 3 2 1

PRINTED IN THE UNITED STATES OF AMERICA

Preface

Cosmetic composition and formulation are becoming increasingly complex, and cosmetic ingredients more sophisticated and functional, while laws and regulations impose more constraints on the cosmetic scientist and manufacturer. The *Handbook of Cosmetic Science and Technology* reviews in a single volume the multiple facets of the cosmetic field and provides the reader with an easy-to-access information source.

This handbook covers topics as varied as the physiology of the potential targets of cosmetics, safety, legal and regulatory considerations throughout the world, cosmetic ingredients, vehicles and finished products, and new delivery systems, as well as microbiology and safety and efficacy testing.

To achieve our goal, we, the editors, requested the contributions of expert scientists from academic dermatology and dermato-cosmetics, the cosmetics industry, ingredients and raw materials producers, and regulatory agencies. Because cosmetology is universal, while having some regional specificity, those authors were selected on a broad geographical basis, with some coming from the United States, Europe, Japan, and Australia. They share in their chapters not only their experience and knowledge but also new information and their expert views regarding the future. We thank the authors for their high dedication, which permitted us to make this handbook a review of the state of the art in cosmetology in the new millennium. The staff of Marcel Dekker, Inc., played a great role in the production of the handbook, ensuring on a day-to-day basis the contact between the editors and the authors. Our thanks especially go to Sandra Beberman, Jane Roh, and Moraima Suarez for their constant and excellent help.

Finally, we encourage our readership to send us their comments and suggestions on what should be modified or considered in future editions.

André O. Barel
Marc Paye
Howard I. Maibach



Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.