ELSEVIER

Dyes and Pigments, Vol. 28, No. 3, pp. 233–236, 1995

Book Reviews

Automotive Paints and Coatings. Edited by G. Fettis. VCH, Weinheim, Germany, 1994. 377 pp. ISBN 3-527-28637-3. Price: DM220.

It states in the preface that 'This book is dedicated wholly to automotives coating formulation, manufacture application and sale'. The authors were drawn from a wide geographical base so as to provide a 'regional as well as world-wide perspective'. The fly-sheet provided by the publisher states that 'Specialists involved in a wide range of disciplines in the coatings industry including chemists, chemical engineers and commercial staff will find this up-to-date source of exceptional interest'. Before commenting on whether these statements carry weight, an overview of each chapter is given. The sequence covers the chapter, the author, length, number of references, and the range of reference citation dates. This is followed by a brief summary.

Chapter 1 Introduction, A. G. Seymour, 8 pages, 8 references (1945–1993). This short chapter deals largely with historical aspects of coatings for the automobile. It identifies the major participants in the automobile coating industries and speculates somewhat as to the nature of future developments.

Chapter 2 Surface Treatment of Aluminium for Automotive Applications, K. Yasohara, 18 pages, 10 references (1974–1991). This chapter deals largely with the pretreatment of aluminium designed for use in various sections of automotives, including wheels and radiators. However, it should be noted that it constitutes only about 5% of the mass of an automobile. This makes it surprising, and in some ways disappointing, that this book does not contain a chapter on the pretreatment of the dominant components—steel and zinc-coated steel.

Chapter 3 Primers for the Automotive Industry, Z. Vachlas, 43 pages, 26 references (some unauthored, some undated) (1969–1991). This chapter provides an excellent description of electrocoat and some interesting ideas on the reverse electrodeposition process, electrophoretic powder coatings, and pre-primed automotive coil steel. The topic of wax-coating does not sit well in this chapter. Thin film passivation would fit more appropriately in a (unwritten) chapter on pre-coated steels.

Chapter 4 Surfaces, D. A. Ansdell, 46 pages, 10 references (1954–1991).

This is an excellent chapter from the point of view of scope and depth of treatment. The bibliography is somewhat dated, on average. This is more than made up for by the clarity of treatment and presentation.

Chapter 5 Topcoats for the Automotive Industry, U. Poth, 28 pages, 97 references (1929–1993). This chapter is written from the standpoint of the resin-precursor/film former chemist. It is mainly a thorough, relatively up-to-date treatment which considers solvents, film formers, pigments, and additives for a range of coating options involving medium and high solids contents. An omission is the lack of attention to nacreous 'pigments' and mica, which are becoming increasingly important. The section on pigments is weak.

Chapter 6 Paints for Plastics (Non-Metals), C. D. Storms, 19 pages, 7 references (1979–1993). This chapter betrays its American origins through its very cursory mention of flame-treated or plasma-treated TPO plastics. Also, the use of non-standard terminology and symbolism to describe polymer systems is somewhat unfortunate. Equally confusing are some of the units used in quantification of results or of amounts of components used. What are the units ta^{-1}, Kj, kj? However, the chapter does provide useful information of a more general nature.

Chapter 7 Specialities for Automotive Coatings, K. Steimel, 24 pages, no references. It took these reviewers some time to realise that this chapter is essentially concerned with bought-in, painted components. It covers a general industrial field, and does not fit well with the rest of the contents. It would have been better if the chapter had been restricted to automotive applications. As it is, it provides elements of confusion.

Chapter 8 Technology Licensing, M. A. Kerr, 18 pages, no references. This is a useful chapter, covering a commonly neglected topic. The approach taken is that of a guide to the world of technology licensing and to procedures. The absence of a bibliography for key sources of supportive information is a serious omission.

Chapter 9 Automotive Technical Service and Market Support, C. H. Kaufmann, 18 pages, no references. This chapter will be a boon to any automotive paint supplier because of the nature of its contents. It is well written and reasonably comprehensive, covering many aspects of market support from training strategies to quality assurance.

The index to the book is only of limited value. Topics such as mica, plasma-treatment and flame-treatment, which are considered in the main body of the text, are not presented in the index.

In general, the book has been poorly edited. There are several significant typographical errors. There has been no attempt to standardise the bibliographic sections. Several cited references have no date and, in some instances, no information as to the location of the reference. There has

been little attempt to standardise on units in this book. Non-SI units abound. Incorrect symbolism for units is a feature.

Other examples of poor editing include the fact that duplication of the theme 'Paint for Plastics' arises (Chapters 3 and 7), as well as in the main chapter for this theme (Chapter 6). Similarly 'Paint Testing' is scattered throughout Chapters 4, 5, and 7. It would have been better if this subject could have been handled in a more consolidated manner. The same types of comment could be made of the treatments given to application techniques. The result is that application is given a cursory description on five occasions instead of being properly handled once.

Comparing the contents of the book with the stated objectives, as outlined in the preface, we find that:

—coating formulation aspects are well described;
—manufacturing aspects are poorly described;
—application aspects are poorly described;
—sales, quality assurance aspects are well described.

Each contributor has been let down by poor editing. There is too much overlap and duplication. There are many significant omissions. For the quoted price, we would have expected, and have a right to expect, superior quality to that presented. The contents are not particularly up-to-date or comprehensive, though some sections are informative. The book is not of 'exceptional interest'.

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Industrial Organic Pigments. By W. Herbst and K. Hunger. VCH, Weinheim, Germany, 1993. xiv + 630 pp. ISBN 3-527-28161-4. Price: DM296.

The publication of the English version of this book, which has become the definitive work on organic pigments in its original German version, will be warmly welcomed by all those interested in colour chemistry in the English-speaking world. The book, some 630 pages long, subdivided into five chapters with 95 figures and 38 tables, provides a comprehensive coverage of all aspects of organic pigment chemistry and technology, justifying the cost of DM296. The first, and longest, chapter provides a brief overview of the various classes of organic pigments, followed by a detailed survey of the range of technical properties required by the pigments with particular emphasis on how these are influenced by chemical and physical structural features. The chapter concludes with a useful account