Book Reviews

Water soluble polymers — Recent Developments

Yale L. Meltzer

Noyles Data Corporation, 1979, 495 pp, $48.00

This book is a detailed review of US Patents issued in the 18 months following March 1977 which deal with water soluble polymers.

The patents are set out alphabetically according to the particular polymer. Each abstract contains a summary, called 'Highlights of the technological achievement', a reference, a description of the background to the patent, and a description of the patent itself. The description contains information about process conditions, materials, and, where appropriate, examples. The abstracts each occupy one or two pages. They are, on the whole, written well and contain all the information that would be required for anyone to assess their importance.

Because the table of contents is organized alphabetically by the polymer concerned, it also acts as a subject index. Other indices are also provided according to company, inventor, and patent number. There is, however, no index according to application or process so that if one wanted to find adhesive applications one would have to look through the entire contents. Such an index might be difficult to organize and could not be complete, but would add to the usefulness of the book.

In assessing the value of the volume, one needs to compare it with other ways of obtaining the same information. Searching Chemical Abstracts would obviously be more difficult. To find water-soluble polyamides amongst the weight of material on water-insoluble polyamides could be laborious. The abstracts are also short, and could be misleading compared to the descriptions in this book. Use of an abstracting service would also be an alternative but, again, references can be lost and the service may be expensive. The final consideration is that if one wanted this information one would also want information from sources other than U.S. Patents. This one would need to obtain by some other search procedure which would pick up the US Patents as well.

I doubt whether this book has a very large potential market. Although it is well written, going through patent abstracts one by one does not make for good leisure-time reading. It is not a good way to introduce oneself to the subject matter, and, because of the lack of an application index, it is not a very good reference book. Only a company with a lot of people working directly in these areas is likely to afford the luxury of having eighteen months of US Patents presented to them in this way.

D. J. Walsh

Plastics Process Engineering

by J. L. Throne

Marcel Dekker Inc., New York 1979, pp 924 + xvi

SFr 140.00

This book has 16 chapters and deals with many aspects of plastics including production, physical properties and processing methods. The treatment is fairly detailed and is intended for senior undergraduate and post graduate students.

The earlier chapters introduce fundamental ideas. The definitions given in chapter 1 are somewhat confusing; some of these definitions are repeated more precisely in chapter 2. Chapter 2 is concerned primarily with polymerisation reactions and chapter 3 with polymerisation reactors. Some of the discussions in these chapters are misleading and there are a number of mistakes. Many of the comments apply to special cases only; no warning of this is given and the unwary reader may think that such cases are general. Some of the technical statements in these early chapters are incorrect. The relationship between the diagrams and the text is not always obvious.

The next three chapters deal with polymer characterisation, viscosity and heat transfer. The section on rheology is good and the discussion on heat transfer is informative. Chapters 7 to 13 deal with processing procedures and various molding techniques. There is a good deal of useful information in these chapters. Most of the diagrams are clear but some plots shown in the graphical illustrations are not identified in the legends or the text. Chapter 14 is concerned with the thermodynamics of polymer systems. Tables of thermodynamic properties are given together with a helpful account of how they might be used. Chapter 15 is an informative introduction of assembly techniques. The treatment of process economics, which is given in the last chapter, is instructive but the cost predictions will, inevitably, become out of date.

In many parts of the book the English is poor and the text is sometimes difficult to follow because words have been used inaccurately. The symbols which are used in the equations are defined in situ and are not listed at the ends of the chapters or sections. There are tables of useful data in the book and problems are given at the end of each chapter.

B. W. Brooks