

to the engineer and engineering useful to the chemist. This crossing of boundaries is achieved with great ease and is the book's unique asset.

D. W. Auckland
(University of Manchester)

Degradation and Stabilization of Vinyl Chloride-Based Polymers

K. S. Minsker, S. V. Kolesov and G. E. Zaikov

B. L. Kazushin (Translator)
T. R. Crompton (Ed.)

Pergamon Press, Oxford, 1988,
xviii + 508 pages, £125.00
ISBN 0-08-034857-2

This book, unlike others in the area of polyvinyl chloride degradation not only represents a more comprehensive approach to the subject but is a Russian translation and therefore provides a valuable insight into many important works in Eastern Europe that may have been previously unattainable because of the language barrier. Its aim is to provide, in some organized form, a collation of most of the available knowledge in the field and discuss the problems involved as well as the various methodologies. The authors have carried out this task in a well-written, well-planned, critical and highly presentable manner and leave few stones unturned. Whilst some of the information contained in the book is covered elsewhere it nevertheless provides a complete forum on the subject, and in this respect, is an extremely valuable text.

The book is made up of a total of 12 chapters beginning with the structure and composition of vinyl chloride-based polymers. The next chapter deals with the degradation of these polymers while the third covers aspects of the chemical stability of PVC. The fourth chapter covers the fundamental stability of vinyl chloride-based polymers with particular emphasis on improving macromolecular stability with Chapter 5 covering the more general aspects of the stabilisation of vinyl chloride polymers. The stability of vinyl chloride polymers to radiation is covered next in Chapter 6 while more specialized treatments for improving stabilisation are covered in Chapter 7.

Chapter 8 is devoted to aspects of the process technology for vinyl chloride polymers such as extrusion and vacuum moulding. The optimization of PVC compositions is discussed in Chapter 9 whereas Chapter 10 presents a most interesting view of the problems of recycling the polymers. Accelerated weathering is discussed in Chapter 11 with the prediction of service life left till Chapter 12.

The book is certainly comprehensive with each chapter being independently referenced rather than a compilation at the end of the book. The approach, like many Russian science authors, is often highly mathematical and although this may at first sight seem a little disconcerting the information supplied nevertheless provides a valuable insight and interpretation into the mechanisms involved. The presentation is excellent with well drawn diagrams and very detailed mechanistic schemes and appears to be an excellent translation.

In general the book will form an excellent addition and indeed complement many others in the field of polymer degradation and stabilisation. In conclusion, it is a most useful and valuable text recommended to all scientists and technologists in industry, academia and government research establishments working in the field.

N. S. Allen
(Manchester Polytechnic)

Rheological Measurement

A. A. Collyer and D. W. Clegg
(Eds.)

Elsevier Applied Science, Barking,
1988, xiii + 647 pages, £87.00
ISBN 1-85166-196-4

This is a good book, borrow it from a library and read it quickly since the material is so new it is likely to go out of date soon. At its price, a library is the only place you will be able to find it.

The book is a collection of articles by eminent rheologists on various topics in rheological measurement. Giving rheologists 50 pages to do their own thing sounds like a prescription for a mad-hatters' tea party but the editors have done a good job. Their Cheshire-cat existence is evident: the grin, in the form

of a uniform format and a tightly controlled subject matter is a pleasure. However, a note in the preface on the book's provenance would have helped. Is it constructed from the proceedings of a conference?

The articles included are: Capillary Rheometry by Mackley; Slit Rheometry by Han; Converging Dies by Gibson; Recoverable Elastic Strain and Swelling Ratio by Tanner; Viscous Heating by Warren; Computer Control and Data Processing in Extrusion Rheometers by Baker *et al.*; Commercial Instruments by France; Elongational Rheometers by Gupta and Sridhar; Rotational Viscometry by Powell; Oscillatory Rheometry by Marin; Normal Stress Differences from Hole Pressure Measurements by Lodge; Sliding Plate and Sliding Cylinder Rheometers by Dealy and Giacomin; Commercial Rotational Instruments by Brownsey; Flow Visualisation in Rheometry by Mackay and Boger; The Rheology of Two Phase Flows by Utracki; and Mathematical Modelling of Two Phase Flows by Barthes-Biesel.

The articles by Brownsey and France seem to overlap. In fact this is not so: France's article should really be called Commercial Extrusion Instruments. There could have been a case for omitting the last two articles in a book on rheological measurement.

All the articles are excellent, if some are clouded by the author's last research paper. Even the ones which, because of the nature of the subject, are literature surveys, are well done. The reviewer would take exception to some things: for example, the use of the word anisotropic for some flowing liquids considered by Gibson seems a little at variance with Oldroyd's definition. However, tea parties are generated by differences of opinion. Perhaps this dormouse should go back to sleep.

The new experimental research student who wants an introduction to the literature of his topic will find this book useful, as well as the expert who knows the subject but 'can't quite remember'. The mathematics is not intrusive. The mathematician with his head in the clouds may come down to earth and sympathize with his experimental colleagues.

A. Kaye
(The University of Manchester
Institute of Science and Technology)