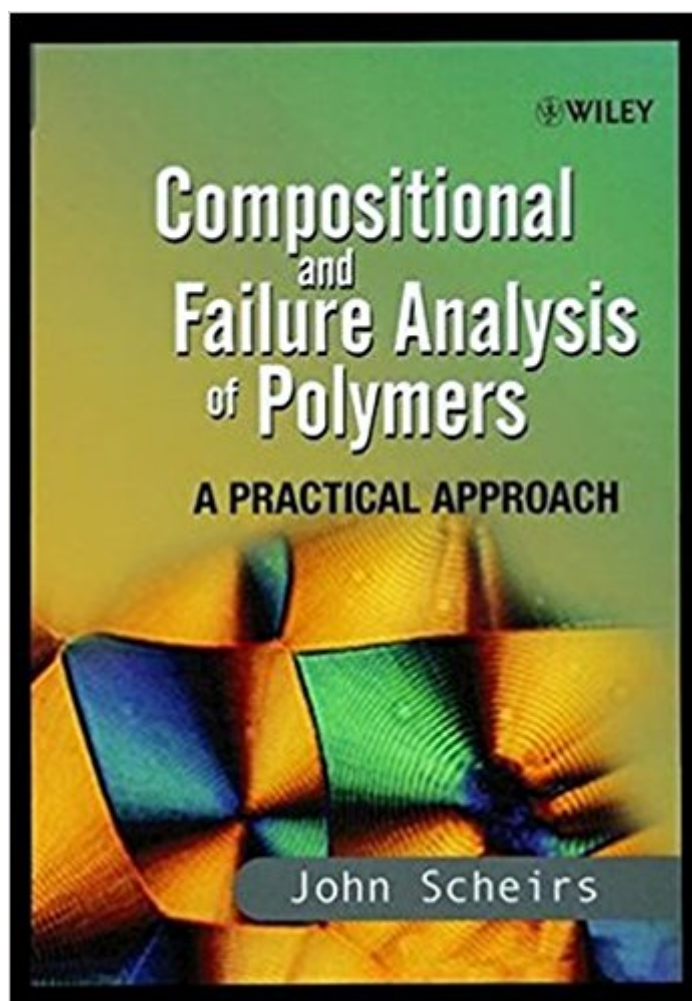


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# Compositional And Failure Analysis Of Polymers: A Practical Approach



## Synopsis

Intended as a practical guide for polymer technologists, engineers and analysts in the plastics, composites and rubber fields, this title describes a range of techniques and strategies for compositional and failure analysis of polymeric materials and products. Numerous examples illustrate the application of analytical methods for solving commonly encountered problems in the polymer industry. The reader is guided towards the most appropriate method of analysis and measurement and the most likely reasons for the failure. Areas covered include: \* Migration and interaction of additives \* Mechanical stress and stress cracking \* Craze and fracture \* Residual stress and weld lines \* Contamination and discoloration Numerous pedagogical methods, illustrative flow diagrams, figures and tables are used throughout the text to make it an invaluable guide to all analysts and polymer engineers in industrial or academic laboratories.

## Book Information

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## Customer Reviews

"an invaluable guide to all analysts and polymer engineers in industrial and academic laboratories: it can therefore be recommended without any reservations." (Macromolecular Chemistry and Physics, Vol.202, No.6, 2001)

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illustrate the application of analytical methods for solving commonly encountered problems in the polymer industry. The reader is guided towards the most appropriate method of analysis and measurement and the most likely reasons for the failure. Areas covered include: \* Migration and interaction of additives \* Mechanical stress and stress cracking \* Crazing and fracture \* Residual stress and weld lines \* Contamination and discoloration Numerous pedagogical methods, illustrative flow diagrams, figures and tables are used throughout the text to make it an invaluable guide to all analysts and polymer engineers in industrial or academic laboratories.

We deal with several polymeric materials in our products and their behavior in aggressive environments is of considerable importance in our product performance. This book provides useful and comprehensive guidance on failure mechanisms and characterization techniques. I expect that it will be a very useful addition to my bookshelf over time. It seems to be very much a how-to or handbook reference rather than an academic textbook. The transaction via was efficient as usual.

an excellent book for those who worry about weathering of polymeric materials like I do. Unique and one of a kind!

Fracture or failure of plastic consumer products is familiar to everyone using domestic products, but why does it occur? This book attempts to answer some of the reasons why polymers (plastics and rubbers) often fail in service, by using the most modern methods of examination and investigation. The book is extremely detailed and scholarly, with numerous cases studies of failure from the author's own files. It is also, as one might expect, a highly technical work since many of the tools to analyse failed plastics are sophisticated methods such as infra-red spectroscopy. Yet that should not deter the average reader in dipping into this work for the insights into product failure. The sections on medical product failures are especially useful since this is an area where poor choice of polymer, poor design or poor manufacture have led directly to death or serious injury among patients. If any criticism can be made, it is that there are too few case studies, which always help to bring a subject alive, and can also help or warn users of problems with specific products. However, it must be admitted that the book is destined for the fellow investigator, who will benefit from the description of so many ways in which such products can fail. Highly recommended.

I obtained this book via inter-library loan. Who can afford these exorbitant prices? The book was good for determining the type of tests and the value of the results. Most can be found via wikipedia.

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