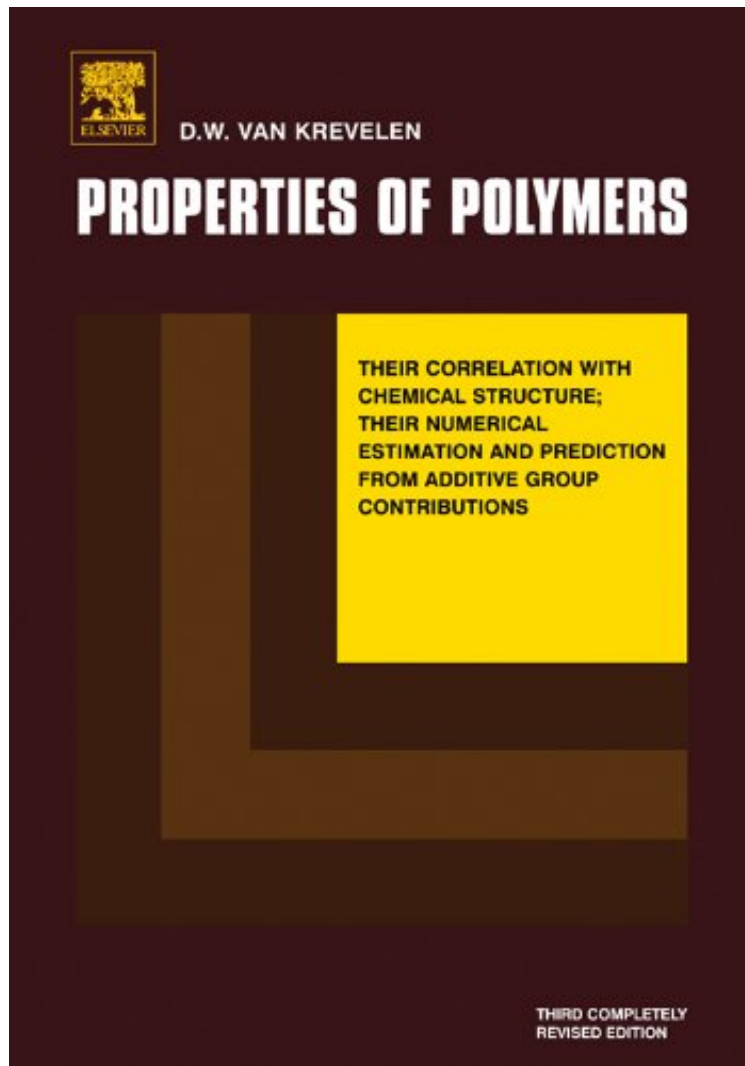


Properties of Polymers

D. W. van Krevelen

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properties. Includes work by Van Krevelen and other giants in the field. I use it in combination with Polymer-CAD software to create some polymers that are, to say the least, very challenging to synthesize. Looking at buying the Fourth Edition soon. 0 of 0 people found the following review helpful. chief plannerBy liu junlaithis book is the best reference for graduate students

Properties of Polymers: Their Correlation with Chemical Structure; Their Numerical Estimation and Prediction from Additive Group Contributions summarizes the latest developments regarding polymers, their properties in relation to chemical structure, and methods for estimating and predicting numerical properties from chemical structure. In particular, it examines polymer electrical properties, magnetic properties, and mechanical properties, as well as their crystallization and environmental behavior and failure. The rheological properties of polymer melts and polymer solutions are also considered. Organized into seven parts encompassing 27 chapters, this book begins with an overview of polymer science and engineering, including the typology of polymers and their properties. It then turns to a discussion of thermophysical properties, from transition temperatures to volumetric and calorimetric properties, along with the cohesive aspects and conformation statistics. It also introduces the reader to the behavior of polymers in electromagnetic and mechanical fields of force. The book covers the quantities that influence the transport of heat, momentum, and matter, particularly heat conductivity, viscosity, and diffusivity; properties that control the chemical stability and breakdown of polymers; and polymer properties as an integral concept, with emphasis on processing and product properties. Readers will find tables that give valuable (numerical) data on polymers and include a survey of the group contributions (increments) of almost every additive function considered. This book is a valuable resource for anyone working on practical problems in the field of polymers, including organic chemists, chemical engineers, polymer processors, polymer technologists, and both graduate and PhD students.

...my students and I have found the second edition to be invaluable, but we are glad to replace it with this new and expanded version. -- Donald R. Paul, The University of Texas at Austin, Journal of the American Chemical Society...should be on the desk of every research manager concerned with polymer properties. It is an essential purchase for libraries who serve the wide community of scientists and engineers concerned with polymers. ...a superb book worth every penny of the price. -- Chemistry and Industry...should have a prominent position in the library of any organisation concerned with polymer properties. It is a superb book which is difficult to fault. -- Polymer International...the third edition is a valuable update of an already indispensable reference source. The expanded coverage is well worth the investment. -- Computational Polymer ScienceThis is the outstanding handbook on the subject of polymer properties. -- ASLIB BooklistThis is the outstanding handbook on the subject of polymer properties. -- ASLIB Booklist