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Thermodynamics And Its Applications (3rd Edition)



Synopsis

Based on the authors' graduate courses at MIT, this text and reference provides a unified understanding of both the critical concepts of chemical thermodynamics and their applications. Part I of this book provides the theoretical basis of classical thermodynamics, including the 1st and 2nd laws, the Fundamental Equation, Legendre transformations, and general equilibrium criteria. Part II contains an extensive description of how thermodynamic properties are correlated, modeled, manipulated and estimated. Both macroscopic, empirically-based and molecular-level approaches are discussed in-depth, for pure components and mixtures. New, detailed coverage shows how traditional macroscopic models are connected to their roots at the molecular level. Part III presents applications of classical thermodynamics in detail. The book connects theory with applications at every opportunity, using extensive examples, classroom problems and homework exercises. Chemical engineering and physical chemistry graduate courses in thermodynamics.

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Customer Reviews

A student five years above me did not like this book. A student four years above me also did not like this book. A student two years above me did not like it either. A student a year above me hated this book. And what a surprise, I didn't like it either. See the pattern? There are several reasons why so many people dislike this book. First of all, the style of the writing is very roundabout and philosophical. If you're reading this book out of interest, it can be interesting. But when you actually have to solve the problems in the back of the chapter by the next day, this indirect approach can be annoying, since you never really know what you really need to know. The first few chapters based

on the First and Second Law are written well, compared to the rest of the book. Chapter 9 is a horrible chapter (on Mixtures) with 200+ Equations in the chapter. Not that having 200+ equations is bad in itself, but the way the chapter is written, you have no idea what equations are important. Chapter 10 on Classical Stat Mech is also very difficult to read. If you've studied Stat Mech before, it may not be too bad. For someone who's never seen Stat Mech, the chapter takes hours to read, and after you've read it, you still have absolutely no idea what the book is trying to say. As for buying this book, if you're really into thermodynamics and you really love and understand it, you might like this book. For a professor, it might be a refreshing read. For normal people who have to buy this book, since it's required for a class -- I feel your pain. Do the world a favor -- once you're done with the book, give it away to someone younger who also needs to suffer through it. I guarantee you that once you're done with it, you'll never pick it up again (and find yourself picking up Smith and Van Ness instead).

Our professor recommended this book to us for chemical engineering thermodynamics. Got a lot of appendix, charts, equations there. Very useful and much more than you need. But I have to say it is not very readable. Too much words.

I wish there was an option to give this negative stars. Or at least zero. If you think this book is good, then it is because of one of two things. Either: 1.) You have NOT HAD to read this book (i.e., for a graduate course in chemical thermo), or 2.) You are a sadistic professor who likes to see their students suffer. There is nothing here of any value. The problems are near impossible to solve, and the text does not explain terms at all. The so called "postulatory approach" provides zero insight into this subject. If you are looking for a text to learn thermo, then keep looking. If you have to buy this book, you have my prayers. If you have to use this book for a class, then I would HIGHLY suggest that you pick up Sandler's "Chemical and Engineering Thermodynamics." You will use it 10X more than Tester's text.

I have taken 3 years of thermodynamics with different books. This book being the worst! I felt I 'delearned' after trying to read some of the chapters. The early chapters were good in explaining the basis of thermodynamics. The rest of the book is way too general, the equations are derived for extremely general cases and it makes trying to relate to real world situations near impossible. The problems at the end of the chapters are not easy and there are NO good examples within the chapters. The problems are written poorly and often open to interpretation so students can get 5 or

6 different answers to one problem. If you are forced to use this book I would recommend that you do NOT read the chapters, only work the problems. Buy a different book to study thermodynamics from.

In grad school, I saw my supervisor had this book on his table. It is his favorite. He used this book teaching one of the classes I took. I solved some problems from the book. The problems were very challenging, but going through the process of solving such problems was really enjoying and rewarding. Thermodynamics itself is not intuitive and very easy to misunderstand. The book was not written for beginners but for those who have already learned an introductory course. If you want to reach a very high level in thermodynamics, it won't disappoint you.

I found this book to be almost worthless in my efforts to learn thermodynamics at a graduate level. Even concepts that I understood were not clear to me after reading this text. Only buy this book if it is required for your course, and even then do not expect it to be useful.

I am in the process of reading this book. I like the way the concepts are introduced from scratch using the basic postulates of thermodynamics. This is very different from the way the subject was taught to me in college. The postulational approach really helps to link all the aspects together and looks at thermodynamics like other branches of physics like mechanics or quantum mechanics which start from a basic set of postulates. The other aspect of the book I like is the large number and variety of problems that comes with the book. I would like to know if it is possible to get the solutions to the problems? Thanks

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