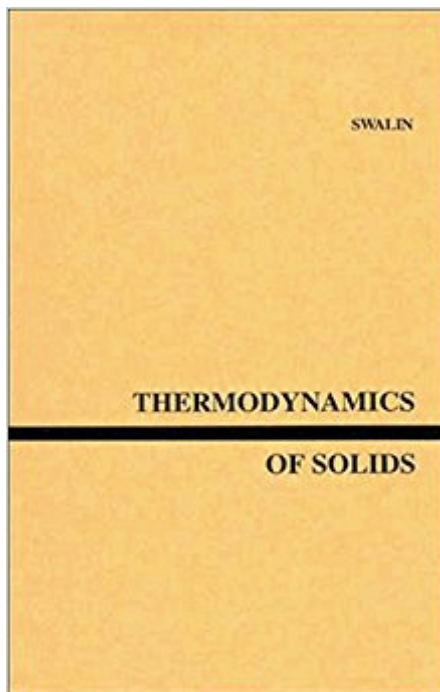


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Thermodynamics Of Solids, 2nd Ed.



Book Information

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Customer Reviews

This is a good book of thermodynamics of solids. It is recommended for studies from the classic viewpoint. For materials engineers it is always worthy having one exemplar on shelf.

This was one of the core books for my candidacy exam. While it is old, it is written pretty well and easy to follow.

I bought this book because I lost the same one I borrowed from school library. It's for replacement.

The book by Swalin is definitely not a book from which you may want to learn thermodynamics. First and foremost, it seems to me that the book is not proof read! There are some very fundamental mistakes in the book which might thoroughly confuse the novice. Just to give you an example: the free energy curves are drawn wrong! A great deal of caution has to be exerted if this book is going to be used for the purpose of learning. In addition, the price is, in my opinion, not right. A few positive points worth mentioning are in order though...Swalin's book exposes the reader to Fermi-Dirac statistics and the theory of heat capacity at a reasonable level of detail within the context of thermodynamics that provides a good insight to the relationship between macroscopic thermodynamic phenomenology and statistical mechanics. That is indeed neat since it demonstrates how "flexible" thermodynamics is in addressing a wide range of physical phenomena.

The treatment of solution thermodynamics and phase equilibria is quite superficial as compared to the books by Gaskell and Lupis. However, the chapters on semiconductors and defect equilibria can conveniently be used as a primer to the subject. Regrettably, I must say that this book definitely is not a "must have book." If you have already mastered the principles of (chemical) thermodynamics, then you may want to take a glance at it.

This is not the book one should use as a introduction to thermodynamics of materials. A critical reading of it indicates that it was not carefully proofread. There are some very fundamental mistakes in the book, which might confuse the novice. For instance, free energy curves are drawn with the wrong slope! I will not go into details of the physical meaning(s) of such mistakes, but it suffices to say that it defeats pretty much everything for what thermodynamics stands. A great deal of caution has to be exerted if this book will be used as a textbook. Its use as a reference book is also quite limited. However, one should give whenever and to wherever credit is due. In Swalin's book you will find Fermi-Dirac statistics and the theory of heat capacity, which is discussed at a reasonable depth. That, in turn, clearly shows the reader the versatility of thermodynamics by providing a transition from macroscopic phenomenology to statistical mechanics. The chapters on thermodynamics of defects are extremely well written at an elementary level. As such, Swalin's book can provide good utility if it is used properly. The discussions on solution thermodynamics and phase equilibria are quite superficial as compared to the books by Gaskell, Lupis, Darken & Gurry and Guggenheim. Given the prohibitively expensive price of the book, it is clearly a book that will not be on your favorites list. If you have already mastered the principles of thermodynamics, then you may want to take a glance at it. But stay away from it if you're a novice.

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