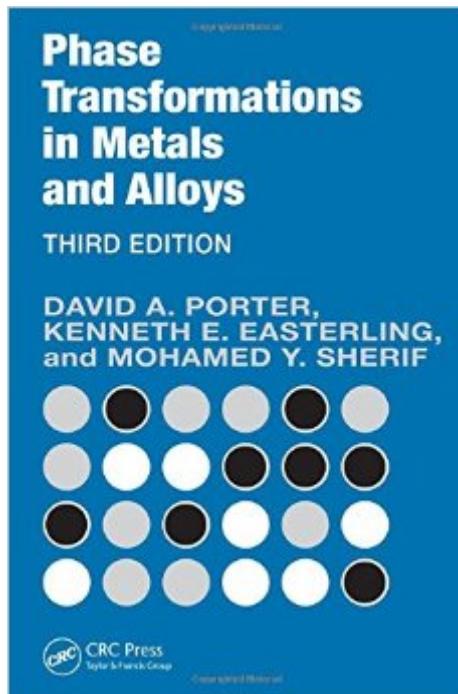


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# Phase Transformations In Metals And Alloys, Third Edition (Revised Reprint)



## Synopsis

Expanded and revised to cover developments in the field over the past 17 years, and now reprinted to correct errors in the prior printing, Phase Transformation in Metals and Alloys, Third Edition provides information and examples that better illustrate the engineering relevance of this topic. It supplies a comprehensive overview of specific types of phase transformations, supplemented by practical case studies of engineering alloys. New in the Third Edition: Computer-aided calculation of phase diagrams Recent developments in metallic glasses The Scheil method of calculating a CCT diagram from a TTT diagram Expanded treatment of the nucleation and growth of polygonal ferrite and bainite New case studies covering copper precipitation hardening of very low carbon bainitic steel and very fine carbide-free bainite Detailed treatment of strain-induced martensite provides a theoretical background to transformation-induced plasticity (TRIP) steels Unique Presentation Links Theory to Application Adding new case studies, detailed examples, and exercises drawn from current applications, the third edition keeps the previous editions' popular easy-to-follow style and excellent mix of basic and advanced information, making it ideal for those new to the field. The book's unique presentation links basic understanding of theory with application in a gradually progressive yet exciting manner. Based on the author's teaching notes, the book takes a pedagogical approach and provides examples for applications and problems that can be readily used for exercises.  illustrations available with qualifying course adoptions

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## Customer Reviews

I had the second edition of Porter and Easterling and lost it between moves. I thought the new edition would be updated and have some great new information in it. I was REALLY wrong. The new author has removed some good information that was in the previous edition and the errors in this edition are appalling. Equations are derived incorrectly or the final equation is wrong. It is clear that no one went through this new edition and edited it. If you are going to purchase the book, I would recommend getting the second edition. I am not sure if the end of the chapter problems are the same, but it really isn't worth buying. I wish I could return this and buy the second edition.

We used this textbook for a graduate level course. My first observation was that a lot of the content in this book was copied from other sources without directly giving credit to the original authors. One example is where Reed-Hill credits an original paper whereas these authors just copied it from Reed-Hill and omitted the citation. There are other examples where they copied content directly from Shewmon. As mentioned above, some content is copied from other sources and this wouldn't be as bad if it weren't for the fact that in most cases they copied the end result without fully explaining the concepts behind it. This can take a lot of your time away from you if you try to derive a formula on your own. I was usually forced to refer to other books when I found myself having a hard time understanding a section or a formula. Sometimes an attempt at an explanation is made but it is not sufficient to explain how the author arrived at the formula or concept. If you are accustomed to textbooks that show you how formulas are derived, this isn't the textbook for you. To make matters worse, some formulas throughout the book are incorrect (and it's the 3rd edition!). The arrangement of the book can sometimes get confusing and you often have to backup and re-read sections to make sure that you are not mixing concepts. I often had to go back to other textbooks and read their sections on a subject and then re-read this book (and then it finally made sense). For my kinetics of phase transformations course, which was very rigorous, I had to supplement this book with other textbooks: Physical Metallurgy Principles by Robert E. Reed-Hill & Reza Abbascian, Diffusion in Solids by Paul Shewmon, and various research papers or lecture notes to fully understand all of the concepts.

This book was not edited properly. There are errors every couple of pages and many equations are wrong in the text, problems, and even solutions. If you have to get this book for a class, make sure you get the next printing which will be out in March.

The publisher ruined a decent Materials Science textbook. The second edition is a 4-5 star book, but the third edition has so many typographical mistakes (especially in the equations) that it is difficult to read. Some of these errors are actually very slippery. For example in one equation, which deals with the surface and volume of a sphere, the  $r^2$  and  $r^3$  are reversed so a student that isn't especially careful will get caught by this. To make matters worse there have been at least two different printings of this book. Both printings are error filled but the errors are different so when I taught my course there was no way to create a unified errata -- instead you have two. There is no indication in the front matter to indicate the production run so you cannot easily tell which set of errors you've purchased. God help us if the CRC elects to produce a third printing of this edition.

Buyer beware! As pointed out by other reviewers the 3rd edition of this title has an inexcusable number of printing errors. It's almost as if a very poor OCR program was used to scan an earlier edition and no human actually reviewed the results. Errors such as replacing a 'theta' with a '6' or '9' are almost laughable. The people at CRC Press should be ashamed of themselves for putting out such a poor product. The book is almost unreadable with the number of errors it contains. Save yourself the trouble and look for a 2nd edition.

This is the quintessential introduction text on phase diagrams and phase transformations in materials science. The first chapter is one of the easiest to understand deliveries of free energy descriptions and phase diagrams I've come across. Each chapter is well thought out and touches on many important concepts in materials science and engineering. Even though the target is for metals and alloys many ideas can be extended towards ceramics and some polymers. Once more, all math treatment is done in the most simple and straight forward way. This blessing however is a slight drawback if you're looking for a graduate treatment of the topic, although there are many other great texts out there that cover this. Like many of the other reviewers this text does have a fair amount of typos and errors but I don't feel it discredits the content. I also think that the full detailed solutions to the chapter problems is very useful when using this textbook for self study. I strongly recommend this in any materials scientist's library.

The number of errors in this book make it detrimental to the learning process. If you are in a class and see this version of this book as a required text PLEASE PLEASE for your sake and for your classmates sake ask your professor to use a different book. Porter, Easterling, Sherif, and especially CRC Press should issue an apology to every student who has had their studies

negatively affected by this book and should recall the damn thing as soon as possible.

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