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Hardness Testing, 2nd Edition
Edited by H. Chandler
1999 • 192 pages
Product Code: 06671G
Price: $77 / ASM Member: $55

Hardness Testing: Principles and Applications
Edited by Dr. Konrad Herrmann, et al.
2011 • 262 pages
ISBN: 978-1-61503-832-9
Product Code: 05331G
Price: $157 / ASM Member: $115

Hardness testing of metals, plastics, rubber and other materials. Technical developments such as the introduction of image processing in the Brinell and Vickers method, the adaptation of hardness testing machines to process-oriented testing conditions, and the development of highly accurate and efficient calibration methods.

Optical Microscopy of Fiber-Reinforced Composites
By Brian S. Hayes and Luther M. Gammon
2010 • 284 pages
ISBN: 978-1-61503-044-6
Product Code: 05303G
Price: $177 / ASM Member: $135

Optical microscopy is one of the most valuable, but under-utilized, tools for analyzing fiber-reinforced polymer matrix composites. Hands-on book covers: sample preparation, microscopic techniques, and applications. Over 180 full color images illustrate the technology’s power to study the microstructure of heterogeneous, anisotropic materials.

By B.L. Bramfitt and A.O. Benscoter
2002 • 354 pages
Product Code: 06040G
Price: $257 / ASM Member: $185

Important metallurgical concepts related to the microstructures of irons and steels. More than 500 representative microstructures, and how they can be altered by heat treatment and other means.

Metallographic Etching, 2nd Edition
By G. Petzow
1999 • 240 pages
ISBN: 978-0-87170-633-1
Product Code: 06670G
Price: $127 / ASM Member: $95

An outstanding source on etchants of all types and electrolytic polishing solutions used by metallographers to reveal the structure of nearly any material to be prepared and examined.

Atlas of Stress-Strain Curves, 2nd Edition
2002 • 816 pages
ISBN: 978-0-87170-739-0
Product Code: 06825G
Price: $307 / ASM Member: $231

More than 1400 curves normalized in appearance to aid making comparisons among materials. All diagrams include metric (SI) units, and many also include U.S. customary units captioned with standard designation, the primary source of the curve, mechanical properties, condition of sample, strain rate, test temperature, and alloy composition.

Tensile Testing, 2nd Edition
Edited by J.R. Davis
2004 • 283 pages
Product Code: 05106G
Price: $137 / ASM Member: $105

A complete guide to the uniaxial tensile test, the cornerstone test for determining the mechanical properties of materials. Learn ways to predict material behavior through tensile testing, and how to test metals, alloys, composites, ceramics, and plastics to determine strength, ductility and elastic/plastic deformation.

Nondestructive Testing
By L. Cartz
1995 • 229 pages
ISBN: 978-0-87170-517-4
Product Code: 06390G
Price: $107 / ASM Member: $75

Problems and defects of all kinds arise in the development and use of mechanical devices, electrical equipment, hydraulic systems, transportation mechanisms and the like. However, an extremely wide range of nondestructive testing (NDT) methods are available to help you examine these different problems and various defects in an assortment of materials under varying circumstances.

Also See
ASM Handbook, Volume 9: Metallography and Microstructures, page 3

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By S.S. Manson and G.R. Halford
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Product Code: 06987G
Price: $257 / ASM Member: $185
Focuses on metallic materials but also addresses unique capabilities of important nonmetals.

Fatigue and Durability of Metals at High Temperatures
By S.S. Manson and G.R. Halford
2009 • 268 pages
Product Code: 05206G
Price: $257 / ASM Member: $185
Written by preeminent experts, this work gives development engineers, students, and component designers an important reference on how to analyze time-dependent metal fatigue at high temperatures.

Atlas of Fatigue Curves
Edited by H.E. Boyer
1986 • 518 pages • Illustrated
Product Code: 06156G
Price: $307 / ASM Member: $231
More than 500 fatigue curves for industrial ferrous and nonferrous alloys. Standard S-N curves, curves showing effect of surface hardening on fatigue strength, crack growth-rate curves, curves comparing the fatigue strengths of various alloys, effect of temperature, humidity, frequency, aging, environment and more.

Fatigue and Fracture: Understanding the Basics
Edited by F.C. Campbell
2012 • 698 pages
ISBN: 978-1-61503-976-0
Product Code: 05361G
Price: $187 / ASM Member: $135
Covers mechanical properties of materials, differences between ductile and brittle fractures, fracture mechanics, the basics of structural joints, high temperature failures, wear, environmentally-induced failures, and steps in the failure analysis process. Chapters devoted to fatigue and fracture of steels, aluminum alloys, titanium and titanium alloys, ceramics, polymers, and continuous fiber polymer matrix composites.

Mechanics and Mechanisms of Fracture: An Introduction
By A.F. Liu
2005 • 458 pages
ISBN: 978-0-87170-802-1
Product Code: 06954G
Price: $167 / ASM Member: $125
Fundamental and practical concepts of fracture are described in terms of stress analysis and the mechanical behavior of materials.

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Product Code: 06998G
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Edited by T. Altan, G. Ngalle and G. Shen
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Product Code: 05104G
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Product Code: 05340G
Price: $207 / ASM Member: $155

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Product Code: 05374G
Price: $187 / ASM Member: $135

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By Mahmoud Y. Demeri
2013 • 312 pages
ISBN: 978-1-62708-005-7
Product Code: 05370G
Price: $167 / ASM Member: $125

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2009 • 272 pages
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Product Code: 05125G
Price: $187 / ASM Member: $135

Handbook of Workability and Process Design
Edited by G.E. Dieter, H.A. Kuhn, and S.L. Semiatin
2003 • 414 pages
Product Code: 06701G
Price: $247 / ASM Member: $185

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Edited by J.R. Davis
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Product Code: 06506G
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A comprehensive examination of the types, microstructures, and attributes of AHSS as well as a review of current and future applications, the benefits, trends, and environmental and sustainability issues.

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Edited by Philip Harvey
1982 • 509 pages
Product Code: 06341G
Price: $157 / ASM Member: $115
Extensive data on properties of more than 425 steels are presented in a ready-reference format that makes information easy to find.

Steel Metallurgy for the Non-Metallurgist
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A practical primer on steel metallurgy for those who select, heat, forge, or machine steel.

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By E. Klar and P. Samal
2007 • 256 pages
Product Code: 05200G
Price: $107 / ASM Member: $75

The History of Stainless Steel
By Harold M. Cobb
2010 • 384 pages • Illustrated
Soft Cover ISBN: 978-1-61503-010-1
Price: $43 / ASM Member: $32
Product Code: 05279G
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Will light the imagination of those curious about how technology can advance and benefit society. Architects, historians, and railroad enthusiasts will enjoy this book as well. Includes a "Stainless Steel Timeline" that lists over 450 interesting and important facts and events on stainless steels technology and applications.

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Basic information on metallurgy, solidification characteristics, and properties, as well as extensive reviews on the low-alloy gray, ductile, compacted graphite, and malleable irons.

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Stainless Steels for Design Engineers
By Michael F. McGuire
2008 • 312 pages
ISBN: 978-0-87170-717-8
Product Code: 05231G
Price: $187 / ASM Member: $135
Addresses selection for corrosion resistance, processing, and major applications.

Handbook of Residual Stress and Deformation of Steel
Edited by G. Totten, M. Howes, and T. Inoue
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Price: $167 / ASM Member: $125
Recommended heat treating practices, methods for maintaining temperature uniformity during heating, tips for preventing oxide formation, and techniques for measuring residual stresses.

Introduction to Stainless Steels, 3rd Edition
By J. Beddoes and J.G. Parr
1999 • 315 pages
ISBN: 978-0-87170-673-7
Product Code: 06685G
Price: $53 / ASM Member: $42

ASM Specialty Handbook® Carbon and Alloy Steels
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1996 • 731 pages
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Co-published by Steel Founders’ Society of America and ASM International
1995 • 472 pages
Product Code: 06820G
Price: $233 / ASM Member: $175
Purchase, design, and manufacture of castings (including casting and molding, heat treatment, and quality assurance), materials selection for mechanical and chemical properties, and materials selection for processing properties.

Tool Steels, 5th Edition
By G. Roberts, G. Krauss, and R. Kennedy
1998 • 364 pages
ISBN: 978-0-87170-599-0
Product Code: 06590G
Price: $207 / ASM Member: $155
Contains a significant amount of information from the past two decades presented in an easy-to-use outline format, making this a “must have” reference for engineers involved in tool-steel production, as well as in the selection and use of tool steels in metalworking and other materials manufacturing industries.

Nonferrous Metals

Aluminum-Silicon Casting Alloys Atlas of Microstructures
By Małgorzata Warmuzek
2016 • Approximately 186 pages
Product Code: 05919G
This atlas provides engineers and researchers who work with aluminum castings with a practical and substantive tool for the visual analysis of the microscopic images of the microstructure of the aluminum casting alloys, as examined during routine laboratory procedures.
Price: $499 / ASM Member: $449
Prepublication Price: $179 / ASM Member: $129
Prepublication price good through July 31, 2016

Aluminum-Silicon Casting Alloys Atlas of Microstructures and Aluminum-Silicon Casting Alloys Atlas of Microfractographs Set
By Małgorzata Warmuzek
Product Code: 05928G
Set Price: $278 / ASM Member: $213

Properties of Aluminum Alloys: Fatigue Data and the Effects of Temperature, Product Form, and Processing
Edited by J.G. Kaufman
2008 • 574 pages
Product Code: 05156G
Price: $257 / ASM Member: $195
Co-published by the Aluminum Association and ASM International.

Properties of Aluminum Alloys: Tensile, Creep, and Fatigue Data at High and Low Temperatures
Edited by J.G. Kaufman
1999 • 311 pages
ISBN: 978-0-87170-632-4
Product Code: 06813G
Price: $257 / ASM Member: $195
Co-published by the Aluminum Association and ASM International.

Titanium: Physical Metallurgy, Processing, and Applications
Edited by F.H. Froes
2015 • 404 pages
ISBN: 978-1-62709-079-8
Product Code: 05448G
Price: $187 / ASM Member: $135
This book covers all aspects of the history, physical metallurgy, corrosion behavior, cost factors and current and potential uses of titanium. Extensive detail on extraction processes is discussed, as well as the various beta to alpha transformations and details of the powder metallurgy techniques.
By J. Gilbert Kaufman
2016 • Approximately 100 pages
ISBN: 978-1-62708-106-1
Product Code: 05917G
Contains valuable information about the fire resistance of aluminum and aluminum alloys including what occurs when aluminum is in a fire and how the effects of fire damage are evaluated. All aspects of aluminum’s fire resistance are described, and reliable methods to estimate the extent of damage resulting from exposure to fire are presented, most notably the relationship between hardness and electrical conductivity with strength.
Price: $140 / ASM Member: $99
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ASM Specialty Handbook® Aluminum & Aluminum Alloys
Edited by J.R. Davis
1993 • 784 pages
Product Code: 06610G
Price: $307 / ASM Member: $231
Hundreds of illustrations, tables, and graphs. Emerging technologies, including aluminum metal-matrix composites, are combined with all the essential aluminum information from the ASM Handbook® series (with updated statistical information).

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Aluminum Extrusion Technology
By P.K. Saha
2000 • 258 pages
Product Code: 06826G
Price: $207 / ASM Member: $165
Practical information and reviews of important theoretical concepts in the different areas of extrusion technology. Intended for technical and engineering personnel, as well as research students in manufacturing.

ASM Specialty Handbook® Copper and Copper Alloys
Edited by J.R. Davis
1977 • 591 pages
Product Code: 06605G
Price: $307 / ASM Member: $231

ASM Specialty Handbook® Magnesium and Magnesium Alloys
Edited by M. Avedesian and H. Baker
1999 • 314 pages
ISBN: 978-0-87170-726-0
Product Code: 06612G
Price: $307 / ASM Member: $231

ASM Specialty Handbook® Nickel, Cobalt, and Their Alloys
Edited by J.R. Davis
2000 • 442 pages
ISBN: 978-0-87170-685-0
Product Code: 06178G
Price: $307 / ASM Member: $231

Introduction to Aluminum Alloys and Tempers
By J.G. Kaufman
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Product Code: 06180G
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Advantages and limitations of aluminum alloys and temper combinations in terms of the relationship of their composition, process history, and microstructure to service requirements.

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Edited by J.R. Davis
2006 • 652 pages
ISBN: 978-0-87170-772-6
Product Code: 06060G
Price: $307 / ASM Member: $231
Covers the selection and applications of copper and copper alloys. Includes all of the essential information contained in the ASM Handbook® series.

Aluminum Alloy Castings: Properties, Processes, and Applications
By J.G. Kaufman and E.L. Rooy
2004 • 340 pages
Co-published by ASM International and the American Foundry Society.
ISBN: 978-0-87170-803-8
Product Code: 06114G
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Extensive collections of property and performance data, including aging response curves, growth curves, and fatigue curves.

Beryllium Chemistry and Processing
By K.A. Walsh • Edited by E.E. Vidal, A. Goldberg, E. Dalder, D.L. Olson, and B. Mishra
2009 • 680 pages
Product Code: 05223G
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Beryllium compounds of industrial interest, alloying, casting, powder processing, forming, metal removal, joining, and other manufacturing processes are covered. Environmental degradation of beryllium and its alloys both in aqueous and high temperature condition, plus health and environmental issues.

ASM Specialty Handbook® Heat-Resistant Materials
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Product Code: 06605G
Price: $307 / ASM Member: $231

Beryllium compounds of industrial interest, alloying, casting, powder processing, forming, metal removal, joining, and other manufacturing processes are covered. Environmental degradation of beryllium and its alloys both in aqueous and high temperature condition, plus health and environmental issues.

The Surface Treatment and Finishing of Aluminum and Its Alloys, (2 Volume Book + CD)
By P.G. Sheasby and R. Pinner
2001 • 1387 pages
Co-published by Finishing Publications Ltd. and ASM International.
Product Code: 06945G
Price: $477 / ASM Member: $405
A comprehensive review and guide to surface engineering – cleaning, finishing, and coating – of aluminum and its alloys. Covers anodizing and coloring treatments. Two-volume set, including CD.
An introduction for understanding the compositional complexity of superalloys and the wide range of alloys developed for specific applications. The basics of alloying, strengthening mechanisms, and structure of superalloys are explained in optimizing particular mechanical properties, oxidation/corrosion resistance, and manufacturing characteristics such as castability, forgeability, and weldability.

By M.J. Donachie and S.J. Donachie
2002 • 439 pages
Product Code: 06128G
Price: $207 / ASM Member: $155

Covers virtually all technical aspects related to the selection, processing, use, and analysis of superalloys.

By M.J. Donachie, Jr.
2000 • 381 pages
Product Code: 06112G
Price: $207 / ASM Member: $155

Significant features of the metallurgy and application of titanium and its alloys.

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Edited by R. Boyer, E.W. Collings, and G. Welsch
1994 • 1169 pages
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Price: $357 / ASM Member: $265

The most comprehensive titanium data package ever assembled. Information on applications, physical properties, corrosion, mechanical properties, fatigue, fracture properties, and elevated temperature properties.

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ISBN: 978-1-61503-721-6
Product Code: 05318V
Price: $703 / ASM Member: $601

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ISBN: 978-0-87170-520-4
Product Code: 06125G
Price: $307 / ASM Member: $231

Each data sheet gives the chemical composition of the alloy, a listing of similar U.S. and foreign alloys, its characteristics, and the recommended heat treating procedure. A wide variety of additional heat treating data is included, such as representative micrographs, isothermal transformation diagrams, cooling transformation diagrams, tempering curves, and data on dimensional change.

1996 • 669 pages
Product Code: 06325G
Price: $307 / ASM Member: $231

Quick access to recommended heat treating information for hundreds of nonferrous alloys, plus composition, trade names, common name, specifications (both U.S. and foreign), available product forms, and typical applications. Information is presented by alloy group in the datasheet format established in the companion edition on irons and steels.

Heat Treater's Guide Companion
Quick reference data on more than 430 steel, aluminum, and magnesium alloys. Use by itself or as a companion to the Heat Treater's Guide print and online database products. Published by ASM and the Heat Treating Society.
Atmosphere Heat Treatment: Principles, Applications, Equipment, Volume 1
By Daniel H. Herring • Publisher: BNP Media
2014 • 700 pages
Product Code: 06732G
Price: $167 / ASM Member: $125

This comprehensive resource emphasizes fundamental principles, materials, metallurgy, applications, and equipment. The focus is on the needs of heat treating and engineering practitioners working in the field. It provides practical advice, a diverse set of application examples, and a wide range of technical and engineering information necessary to make informed decisions about how to heat treat and what equipment and features are necessary to do the job.

Atmosphere Heat Treatment: Atmosphere, Quenching, Testing, Volume 2
By Daniel H. Herring • Publisher: BNP Media
2015 • 824 pages
Product Code: 75149G
Price: $154.99 / ASM Member: $139.49

This second volume provides a comprehensive resource on the subject of atmosphere heat treatment and gives a wide range of useful information, both from a practical and a technical standpoint. Readers of this book will be able to make better and more informed decisions about their equipment, process, and service needs. Written specifically for the heat treater, engineer, and metallurgist by one of their own.

By R.E. Haimbaugh
2015 • 365 pages
ISBN: 978-1-62708-089-7
Product Code: 05505G
Price: $207 / ASM Member: $155

This book is a quick reference source for induction heaters and ties in the metallurgy, theory, and practice of induction heat treating from a hands-on explanation of what floor people need to know. New material has been added including updated information on quenching methods, applications, inspection for quality control, and updated material on power supplies.

Heat Treatment of Gears: A Practical Guide for Engineers
By A.K. Rakhit
2000 • 209 pages
Product Code: 06732G
Price: $167 / ASM Member: $125

Heat treat distortion of gears is discussed in detail for the major heat treat processes. A case history of each successful gear heat treat process is included.

SteCal® 3.0 (CD + Booklet)
By P. Tarin and J. Pérez
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Product Code: 07482A
Price: $447 / ASM Member: $335

Use for predicting the properties obtained from heat treating low-alloy steels. An excellent tool for heat treaters to use in estimating and refining heat treating parameters for unfamiliar steels, or comparing the properties of two steels of different composition to arrive at the most appropriate composition for a particular application.

Atlas of Time-Temperature Diagrams
These two volumes comprise the most comprehensive collection of time-temperature diagrams. Each volume features commonly used curves as well as out-of-print and difficult-to-find data.

Irons & Steels
Edited by G. Vander Voort
1991 • 804 pages • 1839 diagrams
Product Code: 06190G
Price: $307 / ASM Member: $231

Nonferrous Alloys
Edited by G. Vander Voort
1991 • 474 pages • 500 diagrams
Product Code: 06191G
Price: $307 / ASM Member: $231

2012 • ASM International
ISBN: 978-1-61503-840-4
Product Code: 05347V
Price: $703 / ASM Member: $601

This collection of papers represents the heart of the 5th International Conference on Thermal Process Modeling and Computer Simulation. Thermal processes are key manufacturing steps in producing durable and useful products, with solidification, welding, heat treating, and surface engineering being primary steps.

Edited by B.L. Ferguson, R. Goldstein, and R. Papp
2014 • 329 pages
Product Code: 05447G
Price: $168 / ASM Member: $139

This collection of papers represents the heart of the 5th International Conference on Thermal Process Modeling and Computer Simulation. Thermal processes are key manufacturing steps in producing durable and useful products, with solidification, welding, heat treating, and surface engineering being primary steps.

Practical Nitriding and Ferritic Nitrocarburizing
By David Pye
2003 • 256 pages
Product Code: 06950G
Price: $207 / ASM Member: $155

Nitriding and ferritic nitrocarburizing offer unique advantages over other surface hardening heat treatments. This book will help you to understand these processes, select the appropriate process and process parameters, control the process, evaluate results, and troubleshoot.
Elements of Induction Heating: Design, Control, & Applications
By S. Zinn, S.L. Semiatin
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Surface Engineering for Corrosion and Wear Resistance
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