



Metallurgy for the Non-Metallurgist, Second Edition(05306G)

By ASM International

Download now

Read Online ➔

Metallurgy for the Non-Metallurgist, Second Edition(05306G) By ASM International

The completely revised Second Edition of Metallurgy for the Non-Metallurgist provides a solid understanding of the basic principles and current practices of metallurgy.

This major new edition is for anyone who uses, makes, buys or tests metal products. For both beginners and others seeking a basic refresher, the new Second Edition of the popular Metallurgy for the Non-Metallurgist gives an all-new modern view on the basic principles and practices of metallurgy. This new edition is extensively updated with broader coverage of topics, new and improved illustrations, and more explanation of basic concepts.

Why are cast irons so suitable for casting? Do some nonferrous alloys respond to heat treatment like steels? Why is corrosion so pernicious? These are questions that can be answered in this updated reference with many new illustrations, examples, descriptions of basic metallurgy.

This new edition is a must-have ready reference on metallurgy!

↓ [Download Metallurgy for the Non-Metallurgist, Second Editio ...pdf](#)

📖 [Read Online Metallurgy for the Non-Metallurgist, Second Edit ...pdf](#)

Metallurgy for the Non-Metallurgist, Second Edition(05306G)

By ASM International

Metallurgy for the Non-Metallurgist, Second Edition(05306G) By ASM International

The completely revised Second Edition of Metallurgy for the Non-Metallurgist provides a solid understanding of the basic principles and current practices of metallurgy.

This major new edition is for anyone who uses, makes, buys or tests metal products. For both beginners and others seeking a basic refresher, the new Second Edition of the popular Metallurgy for the Non-Metallurgist gives an all-new modern view on the basic principles and practices of metallurgy. This new edition is extensively updated with broader coverage of topics, new and improved illustrations, and more explanation of basic concepts.

Why are cast irons so suitable for casting? Do some nonferrous alloys respond to heat treatment like steels? Why is corrosion so pernicious? These are questions that can be answered in this updated reference with many new illustrations, examples, descriptions of basic metallurgy.

This new edition is a must-have ready reference on metallurgy!

Metallurgy for the Non-Metallurgist, Second Edition(05306G) By ASM International Bibliography

- Sales Rank: #515181 in Books
- Brand: Brand: ASM International
- Published on: 2011-10-13
- Original language: English
- Number of items: 1
- Dimensions: 1.50" h x 7.00" w x 10.00" l, 2.30 pounds
- Binding: Hardcover
- 450 pages

 [Download Metallurgy for the Non-Metallurgist, Second Editio ...pdf](#)

 [Read Online Metallurgy for the Non-Metallurgist, Second Edit ...pdf](#)

Editorial Review

Review

The new Second Edition of Metallurgy for the Non-Metallurgist focuses on the core principles and practices of metallurgy. From the basic concepts of metal structure, the applied aspects of metallurgy are described with vivid illustrations and clear explanations. Readers novice or others will get a solid foundation and understanding of the basics in the many areas of metallurgy. This is THE ultimate one-stop resource available for anyone working with metals.

300+ illustrations with many new figures and color images

Table of Contents

Metallurgy for the Non-metallurgist, 2nd Edition

1 The Accidental Birth of a No-Name Alloy

2 Structure of Metals and Alloys

3 Mechanical Properties and Strengthening Mechanisms

4 Discovering Metals: A Historical Overview

5 Modern Alloy Production

6 Fabrication of Metal Products

7 Testing and Inspection: The Quest for Quality

8 Steel Products and Properties

9 Heat Treatment of Steel

10 Cast Irons

11 Tool Steels

12 Stainless Steels

13 Nonferrous Metals: A Variety of Possibilities

14 Heat Treatment of Nonferrous Alloys

15 Coping With Corrosion

16 The Mechanical Durability of Metals and Alloys

--ASM International

Detailed Topics

Metallurgy for the Non-metallurgist, 2nd Edition

1 The Accidental Birth of a No-Name Alloy

Turning Points in Technology

The Foundations of Innovation

Continuing Material Innovations

2 Structure of Metals and Alloys

Profile of the Atom

Bonding Between Atoms

Crystal Structures and Defects

Diffusion

Solid Solutions

Allotropy of Iron

Melting

Solidification Structures

Equilibrium Phase Diagrams

3 Mechanical Properties and Strengthening Mechanisms

Mechanical Properties

Solid-Solution Strengthening

Effect of Grain Size

Cold Work

Back To Dr. Wilm s Mystery

4 Discovering Metals: A Historical Overview

Native Metals

The Bronze Age

Making Metals Extractive Practices

Iron

Discovery of Modern Metals

Refining of Metals

5 Modern Alloy Production

Introduction

Melting Methods

Solidification Processes

Ingot casting

Continuous Casting

Shape Casting

6 Fabrication of Metal Products

Deformation processes

Powder Metallurgy

Machining

Welding and Joining

7 Testing and Inspection: The Quest for Quality

Metallography

Hardness Testing

Mechanical Testing

Nondestructive Testing

8 Steel Products and Properties

Classifications of Steels

Carbon Steels

Alloy Steels

Alloying Elements in Steels

Strength and Toughness

Corrosion

Physical Properties of Steel

Steel Selection in Automotive Exhausts

9 Heat Treatment of Steel

The Iron-Carbon System

Common Phases in Steel

Critical Temperatures and Transformation Diagrams

Annealing and Normalizing

Types of Annealing Treatments

Furnace Heating and Induction Heating

Hardening and Tempering

Cold Treating of Steel

Case Hardening

Heat Treating Equipment

10 Cast Irons

Classification of Cast Irons

Gray Iron

Ductile Iron

Malleable Iron

Compacted Graphite Iron

High-Alloy Irons

11 Tool Steels

Classification of Tool Steels

Wrought Tool Steels

Powder Metallurgy Tools Steels

Heat treatment of Tools Steels

Machining and Grinding of Tool Steels

12 Stainless Steels

Classification of Stainless Steels

Ferritic Stainless Steels

Austenitic Stainless Steels

Duplex Stainless Steels

Martensitic Stainless Steels

Precipitation Hardening Stainless Steels

13 Nonferrous Metals: A Variety of Possibilities

Light Metals (Al, Be, Mg, Ti)

Corrosion Resistant Alloys (Al, Cu, Ni, Ti)

Superalloys

Refractory Metals (Mo, Nb, Re, Ta, W)

Low-melting point metals (--ASM International

Detailed Topics

Metallurgy for the Non-metallurgist, 2nd Edition

1 The Accidental Birth of a No-Name Alloy

Turning Points in Technology

The Foundations of Innovation

Continuing Material Innovations

2 Structure of Metals and Alloys

Profile of the Atom

Bonding Between Atoms

Crystal Structures and Defects

Diffusion

Solid Solutions

Allotropy of Iron

Melting

Solidification Structures

Equilibrium Phase Diagrams

3 Mechanical Properties and Strengthening Mechanisms

Mechanical Properties

Solid-Solution Strengthening

Effect of Grain Size

Cold Work

Back To Dr. Wilm s Mystery

4 Discovering Metals: A Historical Overview

Native Metals

The Bronze Age

Making Metals Extractive Practices

Iron

Discovery of Modern Metals

Refining of Metals

5 Modern Alloy Production

Introduction

Melting Methods

Solidification Processes

Ingot casting

Continuous Casting

Shape Casting

6 Fabrication of Metal Products

Deformation processes

Powder Metallurgy

Machining

Welding and Joining

7 Testing and Inspection: The Quest for Quality

Metallography

Hardness Testing

Mechanical Testing

Nondestructive Testing

8 Steel Products and Properties

Classifications of Steels

Carbon Steels

Alloy Steels

Alloying Elements in Steels

Strength and Toughness
Corrosion
Physical Properties of Steel
Steel Selection in Automotive Exhausts
9 Heat Treatment of Steel
The Iron-Carbon System
Common Phases in Steel
Critical Temperatures and Transformation Diagrams
Annealing and Normalizing
Types of Annealing Treatments
Furnace Heating and Induction Heating
Hardening and Tempering
Cold Treating of Steel
Case Hardening
Heat Treating Equipment
10 Cast Irons
Classification of Cast Irons
Gray Iron
Ductile Iron
Malleable Iron
Compacted Graphite Iron
High-Alloy Irons
11 Tool Steels
Classification of Tool Steels
Wrought Tool Steels
Powder Metallurgy Tools Steels
Heat treatment of Tools Steels
Machining and Grinding of Tool Steels
12 Stainless Steels
Classification of Stainless Steels
Ferritic Stainless Steels
Austenitic Stainless Steels
Duplex Stainless Steels
Martensitic Stainless Steels
Precipitation Hardening Stainless Steels
13 Nonferrous Metals: A Variety of Possibilities
Light Metals (Al, Be, Mg, Ti)
Corrosion Resistant Alloys (Al, Cu, Ni, Ti)
Superalloys
Refractory Metals (Mo, Nb, Re, Ta, W)
Low-melting point metals (Bi, In, Pb, Sn, Zn)
Reactive Metals (Hf, Ti, Zr)
Precious Metals
Rare Earth Metals
Metalloids (Semimetals)
Special Purpose Metals and Alloys
14 Heat Treatment of Nonferrous Alloys
Aluminum Alloys
Cobalt

Copper
Magnesium
Nickel
Titanium
15 Coping With Corrosion
The Mechanism of Corrosion
The Corrosion Potentials of Metals
The Forms of Corrosion
Corrosion Control
16 The Mechanical Durability of Metals and Alloys
Ductile Fracture
Brittle Fracture and Embrittlement
Fatigue Fracture
The Many Faces of Wear
Rupture and Temperature Effects

17 The Material Selection Process
Property Interrelationships
Fabricability
Materials Specifications --ASM International

Users Review

From reader reviews:

Bryan Smith:

Why don't make it to become your habit? Right now, try to prepare your time to do the important work, like looking for your favorite reserve and reading a guide. Beside you can solve your condition; you can add your knowledge by the guide entitled Metallurgy for the Non-Metallurgist, Second Edition(05306G). Try to stumble through book Metallurgy for the Non-Metallurgist, Second Edition(05306G) as your good friend. It means that it can being your friend when you feel alone and beside regarding course make you smarter than ever before. Yeah, it is very fortunated in your case. The book makes you more confidence because you can know everything by the book. So , let us make new experience and also knowledge with this book.

Marjorie Cook:

The book Metallurgy for the Non-Metallurgist, Second Edition(05306G) can give more knowledge and information about everything you want. Why then must we leave a very important thing like a book Metallurgy for the Non-Metallurgist, Second Edition(05306G)? Some of you have a different opinion about reserve. But one aim that will book can give many information for us. It is absolutely appropriate. Right now, try to closer together with your book. Knowledge or details that you take for that, you may give for each other; you could share all of these. Book Metallurgy for the Non-Metallurgist, Second Edition(05306G) has simple shape but the truth is know: it has great and large function for you. You can search the enormous world by open up and read a guide. So it is very wonderful.

James Waddell:

Why? Because this Metallurgy for the Non-Metallurgist, Second Edition(05306G) is an unordinary book that the inside of the reserve waiting for you to snap this but latter it will zap you with the secret that inside. Reading this book close to it was fantastic author who else write the book in such amazing way makes the content interior easier to understand, entertaining approach but still convey the meaning thoroughly. So , it is good for you for not hesitating having this any longer or you going to regret it. This excellent book will give you a lot of rewards than the other book include such as help improving your ability and your critical thinking means. So , still want to hold off having that book? If I ended up you I will go to the publication store hurriedly.

Barry Altman:

That guide can make you to feel relax. This specific book Metallurgy for the Non-Metallurgist, Second Edition(05306G) was multi-colored and of course has pictures on the website. As we know that book Metallurgy for the Non-Metallurgist, Second Edition(05306G) has many kinds or genre. Start from kids until adolescents. For example Naruto or Private eye Conan you can read and feel that you are the character on there. So , not at all of book are make you bored, any it offers you feel happy, fun and loosen up. Try to choose the best book to suit your needs and try to like reading that will.

Download and Read Online Metallurgy for the Non-Metallurgist, Second Edition(05306G) By ASM International #SCP53HVYMG0

Read Metallurgy for the Non-Metallurgist, Second Edition(05306G) By ASM International for online ebook

Metallurgy for the Non-Metallurgist, Second Edition(05306G) By ASM International Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Metallurgy for the Non-Metallurgist, Second Edition(05306G) By ASM International books to read online.

Online Metallurgy for the Non-Metallurgist, Second Edition(05306G) By ASM International ebook PDF download

Metallurgy for the Non-Metallurgist, Second Edition(05306G) By ASM International Doc

Metallurgy for the Non-Metallurgist, Second Edition(05306G) By ASM International Mobipocket

Metallurgy for the Non-Metallurgist, Second Edition(05306G) By ASM International EPub

SCP53HVYMG0: Metallurgy for the Non-Metallurgist, Second Edition(05306G) By ASM International