

1. Record Nr.	UNINA9911007371503321
Autore	Kassner Michael Ernest
Titolo	Fundamentals of creep in metals and alloys // Michael E. Kassner
Pubbl/distr/stampa	Amsterdam ; ; London, : Elsevier, 2009
ISBN	9786612286933 9781282286931 1282286935 9780080914992 0080914993
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (312 p.)
Classificazione	UQ 7400
Disciplina	620.11233 21 620.16 620.1633
Soggetti	Metals - Creep Metals - Plastic properties Alloys - Creep
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Previous ed.: Amsterdam; Oxford: Elsevier, 2004.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front cover; Fundamentals of Creep in Metals and Alloys; Copyright Page; Preface; Contents; List of Symbols and Abbreviations; Chapter 1. Introduction; 1.1 Description of Creep; 1.2 Objectives; Chapter 2. Five-Power-Law Creep; 2.1 Macroscopic Relationships; 2.1.1 Activation Energy and Stress Exponents; 2.1.2 Influence of the Elastic Modulus; 2.1.3 Stacking Fault Energy and Summary; 2.1.4 Natural Three-Power-Law; 2.1.5 Substitutional Solid Solutions; 2.2 Microstructural Observations 2.2.1 Subgrain Size, Frank Network Dislocation Density, Subgrain Misorientation Angle, and the Dislocation Separation within 2.2.2 Constant Structure Equations; 2.2.3 Primary Creep Microstructures; 2.2.4 Creep Transient Experiments; 2.2.5 Internal Stress; 2.3 Rate-Controlling Mechanisms; 2.3.1 Introduction; 2.3.2 Dislocation Microstructure and the Rate-Controlling Mechanism; 2.3.3 In situ and Microstructure-Manipulation Experiments; 2.3.4 Additional Comments

on Network Strengthening; 2.4 Other Effects on Five-Power-Law Creep; 2.4.1 Large Strain Creep Deformation and Texture Effects 2.4.2 Effect of Grain Size 2.4.3 Impurity and Small Quantities of Strengthening Solutes; 2.4.4 Sigmoidal Creep; Chapter 3. Diffusional Creep; Chapter 4. Harper-Dorn Creep; 4.1 Introduction; 4.2 Theories of Harper-Dorn Creep; 4.3 More Recent Developments; 4.4 Other Materials for which Harper-Dorn has been Suggested; Chapter 5. Three-Power-Law Viscous Glide Creep; Chapter 6. Superplasticity; 6.1 Introduction; 6.2 Characteristics of Fine Structure Superplasticity; 6.3 Microstructure of Fine Structure Superplastic Materials; 6.3.1 Grain Size and Shape; 6.3.2 Presence of a Second Phase 6.3.3 Nature and Properties of Grain Boundaries 6.4 Texture Studies in Superplasticity; 6.5 High Strain-Rate Superplasticity; 6.5.1 High Strain-Rate Superplasticity in Metal-Matrix Composites; 6.5.2 High Strain-Rate Superplasticity in Mechanically Alloyed Materials; 6.6 Superplasticity in Nano and Submicrocrystalline Materials; Chapter 7. Recrystallization; 7.1 Introduction; 7.2 Discontinuous Dynamic Recrystallization (DRX); 7.3 Geometric Dynamic Recrystallization; 7.4 Particle-Stimulated Nucleation (PSN); 7.5 Continuous Reactions; Chapter 8. Creep Behavior of Particle-Strengthened Alloys 8.1 Introduction 8.2 Small Volume-Fraction Particles that are Coherent and Incoherent with the Matrix with Small Aspect Ratios; 8.2.1 Introduction and Theory; 8.2.2 Local and General Climb of Dislocations over Obstacles; 8.2.3 Detachment Model; 8.2.4 Constitutive Relationships; 8.2.5 Microstructural Effects; 8.2.6 Coherent Particles; Chapter 9. Creep of Intermetallics; 9.1 Introduction; 9.2 Titanium Aluminides; 9.2.1 Introduction; 9.2.2 Rate-Controlling Creep Mechanisms in FL TiAl Intermetallics During "Secondary" Creep; 9.2.3 Primary Creep in FL Microstructures 9.2.4 Tertiary Creep in FL Microstructures

---

### Sommario/riassunto

Creep refers to the slow, permanent deformation of materials under external loads, or stresses. It explains the creep strength or resistance to this extension. This book is for experts in the field of strength of metals, alloys and ceramics. It explains creep behavior at the atomic or "dislocation defect" level. This book has many illustrations and many references. The figure formats are uniform and consistently labeled for increased readability. This book is the second edition that updates and improves the earlier edition. Numerous line drawings with consistent format and units all

---

2. Record Nr.	UNINA9910142281703321
Titolo	ACRP report
Pubbl/distr/stampa	Washington, D.C. : , : Transportation Research Board, , 2007-2016
ISSN	1944-5156
Descrizione fisica	1 online resource (160 volumes) : illustrations
Disciplina	629.136
Soggetti	Aeronautics - United States Airports - United States Aeronautique - Etats-Unis Aeronautics Airports Periodicals. United States
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Periodico
Note generali	Each issue also has a distinctive title.