Record Nr. UNINA9910784446203321 Autore Polmear I. J Titolo Light alloys [[electronic resource]]: from traditional alloys to nanocrystals / / I.J. Polmear Oxford;; Burlington, MA,: Elsevier/Butterworth-Heinemann, 2006 Pubbl/distr/stampa **ISBN** 1-281-01440-0 9786611014407 0-08-049610-5 Edizione [4th ed.] Descrizione fisica 1 online resource (437 p.) Disciplina 669/.72 Soggetti Light metals - Metallurgy Light metal alloys Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Previous ed.: London: Arnold, 1995. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Front Cover: Light Alloys From Traditional Alloys to Nanocrystals: Copyright Page; Contents; Preface to the first edition; Preface to the second edition; Preface to the third edition; Preface to the fourth edition; Chapter 1. The light metals; 1.1 General introduction; 1.2 Production of aluminium; 1.3 Production of magnesium; 1.4 Production of titanium; Further reading; Chapter 2. Physical metallurgy of aluminium alloys; 2.1 Work hardening and annealing; 2.2 Principles of age hardening; 2.3 Ageing processes; 2.4 Corrosion; 2.5 Mechanical behaviour; Further Reading Chapter 3. Wrought aluminium alloys3.1 Production of wrought alloys; 3.2 Designation of alloys and tempers; 3.3 Non-heat-treatable alloys; 3.4 Heat-treatable alloys; 3.5 Joining; 3.6 Special products; Further Reading; Chapter 4. Cast aluminium alloys; 4.1 Designation, temper and characteristics of cast aluminium alloys; 4.2 Alloys based on the aluminium-silicon system; 4.3 Alloys based on the aluminium-copper system; 4.4 Aluminium-magnesium alloys; 4.5 Aluminium-zincmagnesium alloys; 4.6 New casting processes; 4.7 Joining; Further reading: Chapter 5. Magnesium alloys

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## Sommario/riassunto

The definitive overview of the science and metallurgy of aluminum. magnesium, titanium and beryllium alloys, this is the only book available covering the background materials science, properties, manufacturing processes and applications of these key engineering metals in a single accessible volume. Use of these metals is now more widespread than ever, and they are routinely found in motor vehicles and aircraft. New material includes materials characteristics and applications; heat treatment properties; fabrication; microstructure/property relationships; new applications and processes.