1. Record Nr. UNICAMPANIASUN0072776

Autore	Gellius, Aulus
Titolo	A. Gellii Noctes Atticae / recognovit brevique adnotatione critica instruxit P. K. Marshall
Pubbl/distr/stampa	Oxonii : e Typographeo Clarendoniano
Descrizione fisica	v. ; 20 cm.
Lingua di pubblicazione	Latino
Formato	Materiale a stampa
Livello bibliografico	Monografia

2. Record Nr. UNINA9910457341803321

Autore	Mills Nigel
Titolo	Plastics [[electronic resource]] : microstructure and applications / / N.J. Mills
Pubbl/distr/stampa	Amsterdam, : Elsevier, 2005
ISBN	1-281-01358-7 9786611013585 0-08-049774-8
Edizione	[3rd ed.]
Descrizione fisica	1 online resource (529 p.)
Collana	Metallurgy and materials science
Disciplina	668.4
Soggetti	Plastics - Microscopy Plastics - Mechanical properties Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Front Cover; Plastics Microstructure and Applications; Copyright Page; Contents; Preface; Chapter 1. Introduction to plastics; 1.1 Introduction; 1.2 Dismantling consumer products; 1.3 Mechanical and optical properties of everyday products; 1.4 Identifying plastics; 1.5 Product

features related to processing; 1.6 Summary; Chapter 2. Molecular structures and polymer manufacture; 2.1 Introduction; 2.2 Bonding and intermolecular forces in polymers; 2.3 Polymerisation; 2.4 Chain regularity; 2.5 Branched and crosslinked polymers; 2.6 Technology and economics of manufacture
2.7 Grades and applications of commodity plasticChapter 3. Microstructure; 3.1 Introduction; 3.2 Modelling the shape of a polymer molecule; 3.3 Non-crystalline forms; 3.4 Semi-crystalline polymers; Chapter 4. Polymeric composites; 4.1 Introduction; 4.2 Elastic moduli; 4.3 Layered structures; 4.4 Rubber toughening; 4.5 Phase-separated structures; 4.6 Modulus of spherulitic polyethylene; 4.7 Foams; 4.8 Short fibre reinforcement; Chapter 5. Processing; 5.1 Introduction; 5.2 Heat transfer mechanisms; 5.3 Melt flow of thermoplastics; 5.4 Extrusion; 5.5 Processes involving melt inflation
5.6 Injection moulding5.7 Rapid prototyping; Chapter 6. Effects of melt processing; 6.1 Introduction; 6.2 Microstructural changes; 6.3 Macroscopic effects; 6.4 Fusion of particle and bead polymers; Chapter 7. Viscoelastic behaviour; 7.1 Introduction; 7.2 Linear viscoelastic models; 7.3 Creep design; 7.4 Cyclic deformation; Chapter 8. Yielding; 8.1 Molecular mechanisms of yielding; 8.2 Yield under different stress states; 8.3 Yield on different timescales; 8.4 Orientation hardening; 8.5 Micro-yielding; Chapter 9. Fracture; 9.1 Introduction; 9.2 Fracture surfaces and their interpretation
9.3 Crack initiation9.4 Crack growth; 9.5 Impact tests; Chapter 10. Degradation and environmental effects; 10.1 Introduction; 10.2 Degradation during processing; 10.3 Degradation at elevated temperatures; 10.4 Fire; 10.5 Weathering; 10.6 Environmental stress cracking; Chapter 11. Transport properties; 11.1 Gases; 11.2 Liquids; 11.3 Solids; 11.4 Light; 11.5 Thermal barriers; Chapter 12. Electrical properties; 12.1 Volume and surface resistivity; 12.2 Insulation and semiconducting polymers; 12.3 Dielectric behaviour; 12.4 Flexible switches and electrets
Chapter 13. Design: Material and shape selection13.1 Introduction; 13.2 Polymer selection; 13.3 Shape selection to optimise stiffness; 13.4 Product shapes for injection moulding; 13.5 Instrument panel case study; Chapter 14. Engineering case studies; 14.1 Introduction; 14.2 Pipes for natural gas distribution; 14.3 Bicycle helmets; 14.4 Data storage on polycarbonate discs; 14.5 Summary; Chapter 15. Sport and biomaterials case studies; 15.1 Introduction; 15.2 Dynamic climbing ropes; 15.3 Blood bag case study; 15.4 UHMWPE for hip joint implants; Appendix A. Diffusion of heat or impurities
A.1 Molecular models for diffusion

Sommario/riassunto

Now in its Third Edition, Plastics is the key text for senior students studying the science and engineering of plastic materials. Starting from microstructure and physical properties, the book covers the mechanical, chemical and electrical properties of plastic materials, and also deals in detail with wider plastics issues that today's engineers and materials scientists need such as manufacturing processes and the design of plastic products. The new edition has been updated to reflect changes in polymer technology and the plastics industry, and the increased knowledge of the m