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Nota di contenuto	Front Cover; Thermoplastics and Thermoplastic Composites; Copyright; Contents; Disclaimer; Acronyms and Abbreviations; 1 - Outline of the Actual Situation of Plastics Compared to Conventional Materials; 1.1 Polymers: The Industrial and Economic Reality Compared to Traditional Materials; 1.2 What Are Thermoplastics, Thermoplastic Elastomer, Thermosets, Composites, and Hybrids?; 1.3 Plastics: An Answer to the Designer's Main Problems; 1.4 Outline of the Technical and Economic Possibilities of Processing; 1.5 Environmental Constraints; 1.6 The Final Material/Process/Cost Compromise; References WebsitesPapers; 2 - The Plastics Industry: Economic Overview; 2.1 Overview of the Global Plastics Industry Today and Tomorrow; 2.2 Market Shares of the Various Thermoplastic Families; 2.3 Market Shares of Composites; 2.4 Market Shares for the Main Application Sectors; 2.5 Importance of the Various Processing Modes; 2.6 Consumption Trends; 2.7 The North American Market; 2.8 The Western European Market; 2.9 The Asian Market; 2.10 Structure of the Plastics Processing Industry; 2.11 Plastic Costs; 2.12 Survey of Main Markets 2.13 The Future: Two Important Issues Linked to Crude Oil: Costs and Drying UpReferences; Technical guides, newsletters, websites; Reviews; 3 - Basic Criteria for the Selection of Thermoplastics; 3.1 Evaluation of Plastic Properties; 3.2 Evaluation of Plastic Structural Properties; 3.3 ISO and ASTM Standards Concerning Polymer Testing; 3.4 Analysis and Diagnostic Equipment; 3.5 Material Selection; 3.6 Precision of the

Molded Parts; 3.7 Schematic Comparison of Thermoplastic and Composite Properties; 3.8 Upgrading and Customization of Raw Polymers; 4 - Detailed Accounts of Thermoplastic Resins
4.1 Polyethylene or Polythene4.2 Polypropylene; 4.3 Other Polyolefins; 4.4 PO and Nonpolyolefin Copolymers; 4.5 Chlorinated Polyethylene; 4.6 Polyvinyl Chloride; 4.7 Chlorinated PVC (PVC-C or CPVC); 4.8 Polyvinylidene Chloride; 4.9 Other Vinyl Polymers; 4.10 Polystyrene (PS, SB, and SMA); 4.11 ABS and Methyl methacrylate-Acrylo nitrile-Butadiene-Styrene; 4.12 SAN, Acrylate Rubber-Modified Styrene Acrylonitrile (ASA), Acrylonitrile-EPDM-Styrene (AES or AEPDS), a ...; 4.13 Polyamides or Nylons (PA); 4.14 Thermoplastic Polyesters (PET, PBT, PETG, PCT, PTMT, PCTG, PEN, PCTA, and PTT)
4.15 Acrylics (PMMA, PMI, SMMA, and MBS)4.16 Polycarbonates; 4.17 Polyoxymethylene, Polyacetal, Acetal, or Polyformaldehyde (POM); 4.18 Polyphenylene Oxide and Polyphenylene Ether; 4.19 Fluorinated Thermoplastics: Fully Perfluorinated Thermoplastics (PTFE or TFE, PFA, FEP), Copolymers (ET ...; 4.20 Cellulosics (CA, CAB, and CP); 4.21 Polysulfone, Polyarylsulfone, Polyethersulfone, and Polyphenylenesulfone; 4.22 Polyphenylene Sulfide (PPS); 4.23 Polyetheretherketones, Polyetherketones, and Polyaryletherketones; 4.24 Polyetherimide; 4.25 Polyamide-imide; 4.26 Polyimides
4.27 Liquid Crystal Polymers

Sommario/riassunto

This book bridges the technology and business aspects of thermoplastics, providing a guide designed for engineers working in real-world industrial settings. The author explores the criteria for material selection, provides a detailed guide to each family of thermoplastics, and also explains the various processing options for each material type. More than 30 families of thermoplastics are described with information on their advantages and drawbacks, special grades, prices, transformation processes, applications, thermal behaviour, technological properties (tenacit