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Polyurethanes; 5.2.1 Microscopy; 5.2.2 IR Spectrometry; 5.2.3 X-Ray Analyses; 5.3 Mechanical Analysis; 5.3.1 Tensile, Tear, and Elongation Testing; 5.3.2 DMA; 5.4 Nuclear Magnetic Spectroscopy; References; Chapter 6 Polyurethane Flexible Foams: Chemistry and Fabrication; 6.1 Making Polyurethane Foams; 6.1.1 Slabstock Foams; 6.1.2 Molded Foams; 6.2 Foam Processes
6.2.1 Surfactancy and Catalysis 6.3 Flexible Foam Formulation and Structure-Property Relationships; 6.3.1 Screening Tests; 6.3.2 Foam Formulation and Structure-Property Relationships; References; Chapter 7 Polyurethane Flexible Foams: Manufacture, Applications, Markets, and Trends; 7.1 Applications; 7.1.1 Furniture; 7.1.2 Mattresses and bedding; 7.1.3 Transportation; 7.1.4 The Molded Foam Market; 7.2 Trends in Molded Foam Technology and Markets; References; Chapter 8 Polyurethane Rigid Foams: Manufacture, Applications, Markets, and Trends; 8.1 Regional Market Dynamics; 8.2 Applications
8.2.1 Construction Foams 8.2.2 Rigid Construction Foam Market Segments; 8.2.3 Appliance Foams; 8.3 Blowing Agents and Insulation Fundamentals; 8.3.1 Blowing Agents; 8.3.2 Blowing Agent Phase-Out Schedule; 8.4 Insulation Fundamentals; 8.5 Trends in Rigid Foams Technology; References; Chapter 9 Polyurethane Elastomers: Manufacture, Applications, Markets, and Trends; 9.1 Regional Market Dynamics; 9.2 Applications; 9.2.1 Footwear; 9.2.2 Nonfootwear Elastomer Applications and Methods of Manufacture; 9.3 Trends in PU Elastomers; References
Chapter 10 Polyurethane Adhesives and Coatings: Manufacture, Applications, Markets, and Trends

Sommario/riassunto

A complete overview of a key plastic. One of the most versatile polymer materials, polyurethanes have a unique chemical nature that allows for shaping and molding to fit all sorts of consumer and industrial products - seat cushions, carpets, insulation, coatings, and refrigerators to name a few. Despite its popular uses, polyurethane science has only relatively recently achieved appreciation for the richness of its expression as a polymer family. This book provides a thorough presentation of polyurethane science, technology, markets and trend analysis based on recent patents.
