

1. Record Nr.	UNINA9910144710303321
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Titolo	Handbook of condensation thermoplastic elastomers [[electronic resource] /] / Stokyo Fakirov
Pubbl/distr/stampa	Weinheim ; ; [Great Britain], : Wiley-VCH, 2005
ISBN	1-280-52119-8 9786610521197 3-527-60661-0 3-527-60689-0
Descrizione fisica	1 online resource (645 p.)
Altri autori (Persone)	FakirovStoyko
Disciplina	620.194
Soggetti	Elastomers Thermoplastics Condensation products (Chemistry)
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	Handbook of Condensation Thermoplastic Elastomer; Preface; Contents; Contributors; PART I INTRODUCTION; Chapter 1 Creation and Development of Thermoplastic Elastomers, and Their Position Among Organic Materials; 1. Birth and development of TPEs: a brief survey; 2. Main routes to thermoplastic elastomer preparation; 2.1. Living anionic polymerization; 2.2. Living cationic polymerization; 2.3. Controlled radical polymerization; 2.4. Polycondensation and polyaddition; 2.5. Chemical modification and grafting; 2.6. Preparation by blending; 2.7. Preparation by dynamic vulcanization 3. Techniques used in the characterization of TPEs3.1. Chromatography; 3.2. Spectrometric techniques; 3.3. Scattering techniques; 3.4. Microscopies; 3.5. Controlled degradation; 3.6. Thermal techniques; 4. Properties and processing of TPEs; 4.1. Injection molding; 4.2. Compression molding; 4.3. Extrusion; 4.4. Blow processings; 4.5. Thermoforming; 4.6. Reactive processings; 4.7. Degradation in processing; 5. Position of TPEs among organic materials and their applications; 6. Future trends; References Chapter 2 Polycondensation Reactions in Thermoplastic Elastomer

Chemistry: State of the Art, Trends, and Future Developments1. Introduction; 2. Preparation of block copolymers by polycondensation. A critical review; 2.1. General considerations; 2.2. Direct polycondensation of ω , ω -difunctional oligomers; 2.3. Polycondensation of an ω , ω -difunctional oligomer with the precursors of another block; 2.4. Oligomer-coupling reactions; 2.5. Characterization techniques. Side reactions; 3. New structures; 3.1. Block copolymers containing liquid crystalline structures 3.2. Liquid crystalline sequences as part of the backbone3.3. Liquid crystalline sequences as side chains; 3.4. Metallo-supramolecular block copolymers; 3.5. Block copolymers prepared from metal-containing macrocycles; 3.6. The use of microorganisms; 4. Conclusions; References; PART II POLYESTER-BASED THERMOPLASTIC ELASTOMERS; Chapter 3 Polyester Thermoplastic Elastomers: Synthesis, Properties, and Some Applications; 1. Introduction; 2. Chemical structure of polyester elastomers; 3. Poly(alkylene oxide) flexible segment-based polyester elastomers 4. Modified poly(butylene terephthalate) rigid segment-based polyester elastomers5. Branched polyester elastomers; 6. Synthesis of poly(ether ester) block copolymers; 7. Other multiblock polyester elastomers; 8. Polyester thermoplastic elastomers from blends; 9. A new processing aspect: weldability of polyester elastomers; 10. Polyester elastomers for biomedical application; 11. Conclusions and outlook; References; Chapter 4 Terpoly(Ester-b-Ether-b-Amide) Thermoplastic Elastomers: Synthesis, Structure, and Properties; 1. Introduction; 2. Chemical structure of terpoly(ester-b-ether-b-amide)s 3. Synthesis of triblock -(GT-b-PO4-b-PA)(n)- polymers

Sommario/riassunto

Reporting on the work of an international team of scientists actively involved in the study of thermoplastic elastomers (TPE) based on polyesters, polyamides, and polyurethanes, this book is the first to provide a detailed description of condensation TPE with close attention paid to polyamide-based systems. Reflecting the increasing importance of TPE as engineering plastics, the authors discuss the widened application opportunities by preparing systems with various chemical compositions and molecular structures as (semi-) interpenetrating networks. The contents also cover the chemical aspects,
