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Rubber; (i) Kinetics and Molecular Weights; (ii) Chain Microstructure; 2.5.3 Emulsion Polymerization of Chloroprene; (i) Kinetics; (ii) Chain Structure; 2.6 Copolymerization; 2.6.1 Kinetics; 2.6.2 Emulsion Copolymerization of Dienes; (i) Styrene-Butadiene (SBR); (ii) Butadiene-Acrylonitrile (Nitrile Rubber); (iii) Chloroprene; 2.7 Chain Polymerization by Cationic Mechanism
2.7.1 Mechanism and Kinetics2.7.2 Butyl Rubber; 2.7.3 Living Cationic Polymerizations; 2.7.4 Other Cationic Polymerizations: Heterocyclic Monomers; 2.8 Chain Polymerization by Anionic Mechanism; 2.8.1 Mechanism and Kinetics; 2.8.2 Chain Microstructure of Polydienes; 2.8.3 Copolymers of Butadiene; 2.8.4 Terminally Functional Polydienes; 2.9 Stereospecific Chain Polymerization and Copolymerization by Coordination Catalysts; 2.9.1 Mechanism and Kinetics; 2.9.2 Ethylene-Propylene Rubbers; 2.9.3 Polydienes; 2.9.4 Polyalkenamers; 2.10 Graft and Block Copolymerization *
2.10.1 Graft Copolymerization by Conventional Free Radical Reactions (i) Chemical Initiation; (ii) Other Methods; 2.10.2 Block Copolymers by Controlled Radical Mechanisms; 2.10.3 Block Copolymers by Anionic Mechanism; 2.10.4 Block Copolymers by Cationic Mechanism; 2.10.5 Block Copolymers by Ziegler-Natta (Insertion) Mechanism; References; Structure Characterization in the Science and Technology of Elastomers; 3.1 Introduction; 3.2 Chemical Composition; 3.3 Sequence Distribution of Repeat Units; 3.4 Chain Architecture; 3.4.1 Molecular Weight and Its Distribution; 3.4.2 Branching; 3.4.3 Gel
3.5 Glass Transition and Secondary Relaxation Processes

Sommario/riassunto

The 4e of The Science and Technology of Rubber provides a broad survey of elastomers with special emphasis on materials with a rubber-like elasticity. As in previous editions, the emphasis remains on a unified treatment of the material, exploring chemical aspects such as elastomer synthesis and curing, through recent theoretical developments and characterization of equilibrium and dynamic properties, to the final applications of rubber, including tire engineering and manufacturing. Updated material stresses the continuous relationship between ongoing research in synthesis, physics, stru