Modern Polyesters: Chemistry and Technology of Polyesters and Copolyesters

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DESCRIPTION

Provides an overview of the family of polyester polymers which comprise an important group of plastics that span the range of commodity polymers to engineering resins. It describes the preparation, properties and applications of polyesters. Readers will also find details on polyester-based elastomers, biodegradable aliphatic polyester, liquid crystal polyesters and unsaturated polyesters for glass-reinforced composites.

• Presents an overview of the most recent developments.
• Explores synthesis, catalysts, processes, properties and applications.
• Looks at emerging polyester materials as well as existing ones.
• Written by foremost experts from both academia and industry, ensuring that both fundamentals and practical applications are covered.

ABOUT THE AUTHOR

Dr. John Scheirs has worked extensively with poly (ethylene terephthalate) (PET) and related polyesters. His early work involved studying the UV stability of PET and poly(ethylene naphthalate) (PEN) in France and later he was involved with studying various industrial problems involving polyesters, such as photodegradation, annealing, crystallization behaviour, embrittlement, degradation by aminolysis, differential scanning calorimetry (DSC) analysis, environmental stress cracking, hydrolysis, nucleating
agents, transesterification, injection moulding of recycled PET compounds, solid-state polycondensation, desiccant drying of PET and melt stabilization of PET. More recently in the period 1998-2000, he was the technical manager for Coca-Cola Amatil’s world-first PET reforming plant which converts post-consumer PET bottles into high-grade, high IV palletized PET for direct reuse in new bottles and injection and sheet moulding applications. John Scheirs is now the principal consultant with ExcelPlas Polymer Technology where he specializes in polymer recycling chemistry, formulation, processing and testing.

Dr. Timothy E. Long is a professor in the Department of Chemistry and the Macromolecular Science and Engineering Program at Virginia Tech in Blacksburg, VA, USA. Professor Long was employed at Eastman Kodak and Eastman Chemical for 12 years prior to joining the faculty at Virginia Tech in 1999. He has extensive industrial and academic experience in fundamental macromolecular chemistry, with an awareness of the industrial and commercial impact of polyester chemistry and processing, structure-property relationships. And polyester applications. His research interests include polyester ionomers, high-gas-barrier polyester for packaging, new polyester catalyst development. Thermotropic liquid crystalline polyesters, functional poly(lactides), and branched and hyperbranched polyesters. He is the author of over 100 refereed papers and holds 25 patents dealing with various aspects of macromolecular science and engineering.