Record Nr. UNINA9910463428503321 Handbook of polymer applications in medicine and medical devices // **Titolo** edited by Kayvon Modiarrad, MD, PhD, Chief, Respiratory Disease Vaccine Development, United States National Institutes of Health, Sina Ebnesajjad, PhD, President, FluoroConsultants Group, LLC Pubbl/distr/stampa Oxford:,: William Andrew,, 2014 **ISBN** 0-323-22169-6 Descrizione fisica 1 online resource (365 p.) Collana PDL handbook series Altri autori (Persone) ModjarradKayvon EbnesajjadSina Disciplina 365 Soggetti Polymers in medicine Electronic books. Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Description based upon print version of record. Note generali Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Front Cover; Handbook of Polymer Applications in Medicine and Medical Devices; Copyright Page; Contents; Preface; Author Biographies; 1 Introduction; 1.1 History; 1.2 A Historical Example; 1.3 Anthology Architecture; 1.4 Summary; References; 2 Application of Plastics in Medical Devices and Equipment; 2.1 Device Industry Overview; 2.2 Health-care Trends; 2.2.1 Minimally Invasive Surgeries; 2.2.2 Alternate Site Treatment; 2.2.3 Prevention vs. Treatment; 2.3 From Legacy Materials to Advanced Specialty Polymers for Devices; 2.4 Driving Trends Leading to New Material Requirements 2.4.1 Functionality 2.4.2 Compatibility; 2.4.3 Cost; 2.4.3.1 Material Costs or Process Improvements; 2.4.3.2 Light Weighting; 2.4.3.3 Commoditizing Materials of Construction; 2.4.3.4 Technology Innovations; 2.4.4 Ecological and Environmental Concerns and Influence of the Consumer; 2.5 Market Factors Affecting the Industry; 2.5.1 Concerns Over DEHP and Sometimes Even PVC; 2.5.2 Bisphenol A; 2.5.3 The Need for "Green"; 2.5.4 Globalization of Markets; 2.5.5 Globalization of Manufacturing; 2.5.5.1 Energy Costs; 2.5.6 Global

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Sommario/riassunto

While the prevalence of plastics and elastomers in medical devices is now quite well known, there is less information available covering the use of medical devices and the applications of polymers beyond medical devices, such as in hydrogels, biopolymers and silicones beyond enhancement applications, and few books in which these are combined into a single reference. This book is a comprehensive reference source, bringing together a number of key medical polymer topics in one place for a broad audience of engineers and scientists, especially those currently developing new medical