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2.6 Silicone Aromatic Polyesters and Polyamides 2.7 Silicone Polycaprolactone; 2.8 Silicone Polyethers; 2.9 Silicone Sugar Conjugates; 2.10 Stereo-Selective Esterification of Organosiloxanes; 2.11 Conclusion and Outlook; Acknowledgments; References; 3 Phosphorus Containing Siliconized Epoxy Resins; 3.1 Introduction; 3.1.1 Applications of Epoxy Resins; 3.1.2 Need for Modified Epoxy and Modifiers; 3.1.3 Multi-Faceted Properties of Phosphorus-Containing Siliconized Epoxy Resins; 3.1.4 Matrix Materials for the Fabrication of Bulk and Nanocomposites 3.2 Preparation of Siliconized Epoxy-Bismaleimide Intercrosslinked Matrices 3.2.1 Dynamic Mechanical Thermal Analysis (DMTA); 3.2.2 Thermal Gravimetric Analysis (TGA); 3.2.3 Limiting Oxygen Index Test; 3.2.4 Moisture Absorption Behavior; 3.2.5 SEM Investigation; 3.2.6 Research Findings and Recommendation; 3.3 Phosphorus-Containing Siliconized Epoxy Resin as Thermal and Flame Retardant Coatings; 3.3.1 Preparation of Siliconized Epoxy Prepolymer; 3.3.2 Glass Transition Temperature and Thermal Stability of Phosphorus-Containing Siliconized Epoxy Resin; 3.3.3 Limiting Oxygen Index (LOI) 3.3.4 Recommendation 3.4 High Functionality Resins for the Fabrication of Nanocomposites; 3.4.1 Mechanical Properties; 3.4.2 Thermo-Mechanical Behavior; 3.4.3 Thermal Properties; 3.4.4 Flame Retardancy Studies; 3.4.5 Effect of Curing Agent towards Flame Retardancy; 3.4.6 Nano Reinforcement (POSS) Effect towards Flame Retardancy; 3.4.7 Highlights; 3.5 Anticorrosive and Antifouling Coating Performance of Siloxane- and Phosphorus-Modified Epoxy Composites; 3.5.1 Results of Potentiodynamic Polarization Study; 3.5.2 Results of Electrochemical Impedance Study (EIS); 3.5.3 Salt Spray Test Results 3.5.4 Results from Antifouling Studies

Sommario/riassunto

The encyclopedia will be an invaluable source of information for researchers and students from diverse backgrounds including physics, chemistry, materials science and surface engineering, biotechnology, pharmacy, medical science, and biomedical engineering.

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