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Phenolic Resins as Insulation MaterialsPhenolic Resins in Friction Materials; Bonded and Coated Abrasives; Phenolic Resins in Foundry and Shell Molding Applications; Shell Molding Process; Cold Box Process; Trends in Foundry and Shell Molding; Phenolic Resins in Laminating Applications; Phenolic Resins in Molding Applications; Phenolic Resins in Coating Applications; Modification of Phenolic Resins; Post-addition of Urea; Co-Condensation Between Phenol and Urea; Addition of Tannins, Lignin, and Isocyanates; Resorcinol Adhesives; Chemistry of RF Resins
Phenol-Resorcinol- Formaldehyde AdhesivesSpecial Adhesives of Reduced Resorcinol Content; Thermosetting Phenolic Adhesives Based on Natural Resources; References; Further Reading; 3 Polybenzoxazine-new generation phenolics; Introduction; Synthesis of Benzoxazine Monomers (BZ); Ring-Opening Polymerization of Benzoxazines; Regioselectivity and Cross-Linked Structure; Inter/Intramolecular H-Bonding; Kinetics of Thermal Cure; Structure-Property Relationships; Benzoxazines Containing Additional Curable Moieties; Unfunctionalized Polybenzoxazines; Main Chain Polybenzoxazines
Blends/Composites of PolybenzoxazinesCo-Reactive and Non-Reactive Blends; Fiber and Micro Composites; Nanocomposites of PBZ; Green Chemistry Approaches in PBZ; Click Chemistry in PBZ; Stability and Degradation; Outlook; Acknowledgments; References; 4 Aminos; Introduction; Raw Materials; Urea; Melamine; Chemistry of UF Resins: Urea-Formaldehyde Condensation; Chemistry of MF Resins: Melamine-Formaldehyde Condensation; Mixed Melamine Resins; General Principles of Manufacture and Application; Adhesive and Bonding Resins; Coating Resins; Laminating Resins; Amino Molding Resins Applications of Amino Resins

Sommario/riassunto

Thermosetting plastics are a distinct category of plastics whose high performance, durability and reliability at high temperatures makes them suitable for specialty applications ranging from automotive and aerospace through to electronic packaging and consumer products (your melamine kitchen worktop is a thermoset resin!). Recent developments in thermoset plastics technology and processes has broadened their use exponentially over recent years, and these developments continue: in November 2011, French scientists created a new lightweight thermoset that is as strong and stable as previous ma