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Non-staining; 2.11 Plasticization; 2.12 Tear Resistance; 2.13 Tear Resistance: Contour Curve Studies of Silica Content Effects; 2.14 Tear Resistance: Silica Primary Particle Size; 2.15 Tear Resistance Non-Marking Solid tires; 2.16 Shelf Aged Stiffness and Green Strength; 2.17 Peroxide Cure; 2.18 Peroxide Curing: Silica Reinforcement and Structure; 2.19 Peroxide Curing: Silica Surface Area; 2.20 Peroxide Cure: Silane Coupling; 2.21 Silane Coupling: Sulfur Cure Systems; 2.22 Zinc-Free Cure Systems; 2.23 Zinc-Free Cure Systems: Polyisoprene (IR); 2.24 Brass Adhesion; 2.25 Brass Adhesion Mechanism; 2.26 Adhesion to Textile Fabrics; the HRH System; 2.27 Fabric Adhesion: Dynamic Testing; 2.28 Heat Resistance; Natural Rubber Formulary; Chapter 3. COMPOUNDING PRECIPITATED SILICA IN EMULSION SBR 3.1 Introduction; 3.2 Silica and Carbon Black; 3.3 Cure Systems: Activation with Glycols; 3.4 Cure System: Zinc Oxide Activation; 3.5 Cure System: Magnesium Oxide Activation; 3.6 Cure System: Lead oxide (Litharge) Activation; 3.7 Cure System: Stearic Acid; 3.8 Cure Systems: Primary, Secondary Accelerators; 3.9 Cure Systems: Single Accelerators; 3.10 Cure Systems: Sulfur Concentration; 3.11 Plasticization; 3.12 Antioxidants; 3.13 Tear Resistance: Silica Primary Particle Size; 3.14 Tear Resistance: Silica Content; 3.15 Fabric Adhesion; 3.16 Heat Resistance; 3.17 Silane Coupling 3.18 Silane Coupling: Competition Emulsion SBR Formulary; Chapter 4. COMPOUNDING PRECIPITATED SILICA IN SOLUTION SBR AND BR; 4.1 Introduction; 4.2 Silica and Carbon Black; 4.3 Zinc-Free Cure Systems; 4.4 Zinc-Free Cure Systems: Accelerators & Sulfur; 4.5 Zinc-Free Cure Systems: Polymer Effects; 4.6 Zinc-Free Cure Systems: Zinc Oxide and HMT; 4.7 Zinc-Free Cure Systems: Effects of Additives; 4.8 Zinc-Free Cure Systems: Sulfur Content; 4.9 Zinc-Free Cure System: Antioxidants; 4.10 Zinc-Free Cure Systems: Processing; 4.11 Zinc-Free Systems: Plasticizers 4.12 Zinc-Free Systems: Additive Plasticizers

Sommario/riassunto

This valuable guide to compounding elastomers with precipitated silica covers principles, properties, mixing, testing and formulations from a practical perspective. This handbook and reference manual will serve those who work on part design, elastomer formulation, manufacturing and applications of elastomers. Ample discussion of compound specifications adds to the usefulness of this book to practitioners. Comparisons of carbon black and silica compounds throughout the book allow readers to select the most suitable formulation for applications ranging from tires to electrical insulation to shoe