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Polymer-Related Systems; Properties of Polymer Solutions; Polymer Flow Behavior in Porous Media; Displacement Mechanisms in Polymer Flooding; Amount of Polymer Injected; Performance Analysis by Hall Plot; Polymer Mixing and Well Operations Related to Polymer Injection; Special Cases, Pilot Tests, and Field Applications of Polymer Flooding; Polymer Flooding Experience and Learning in China; Chapter 6: Polymer Viscoelastic Behavior and Its Effect on Field Facilities and Operations; Introduction; Viscoelasticity
Polymer Viscoelastic BehaviorObservations of Viscoelastic Effect; Displacement Mechanisms of Viscoelastic Polymers; Effect of Polymer Solution Viscoelasticity on Injection and Production Facilities; Chapter 7: Surfactant Flooding; Introduction; Surfactants; Types of Microemulsions; Phase Behavior Tests; Surfactant Phase Behavior of Microemulsions and IFT; Viscosity of Microemulsion; Capillary Number; Trapping Number; Capillary Desaturation Curve; Relative Permeabilities in Surfactant Flooding; Surfactant Retention; Displacement Mechanisms; Amount of Surfactant Needed and Process Optimization
An Experimental Study of Surfactant FloodingChapter 8: Optimum Phase Type and Optimum Salinity Profile in Surfactant Flooding; Introduction; Literature Review; Sensitivity Study; Further Discussion; Optimum Phase Type and Optimum Salinity Profile Concepts; Summary; Chapter 9: Surfactant-Polymer Flooding; Introduction; Surfactant-Polymer Competitive Adsorption; Surfactant-Polymer Interaction and Compatibility; Optimization of Surfactant-Polymer Injection Schemes; A Field Case of SP Flooding; Chapter 10: Alkaline Flooding; Introduction; Comparison of Alkalis Used in Alkaline Flooding
Alkaline Reaction with Crude Oil

Sommario/riassunto

Crude oil development and production in U.S. oil reservoirs can include up to three distinct phases: primary, secondary, and tertiary (or enhanced) recovery. During primary recovery, the natural pressure of the reservoir or gravity drive oil into the wellbore, combined with artificial lift techniques (such as pumps) which bring the oil to the surface. But only about 10 percent of a reservoir's original oil in place is typically produced during primary recovery. Secondary recovery techniques to the field's productive life generally by injecting water or gas to displace oil and drive it to a pro