

## **Loss in Efficacy of Viscoelastic Ionic Liquid Surfactants under High Salinity during Surfactant Flooding**

**Authors :** Shilpa K. Nandwani, Mousumi Chakraborty, Smita Gupta

**Abstract :** When selecting surfactants for surfactant flooding during enhanced oil recovery, the most important criteria is that the surfactant system should reduce the interfacial tension between water and oil to ultralow values. In the present study, a mixture of ionic liquid surfactant and commercially available binding agent sodium tosylate has been used as a surfactant mixture. Presence of wormlike micelles indicates the possibility of achieving ultralow interfacial tension. Surface tension measurements of the mixed surfactant system have been studied. The emulsion size distribution of the mixed surfactant system at varying salinities has been studied. It has been found that at high salinities the viscoelastic surfactant system loses their efficacy and degenerate. Hence the given system may find application in low salinity reservoirs, providing good mobility to the flood during tertiary oil recovery process.

**Keywords :** ionic liquids, interfacial tension, Na-tosylate, viscoelastic surfactants

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