Recrosslinked Preformed Particle Gels
Case 14MST028

Water production is a major problem for most mature oilfields. Excess water production results in increased levels of corrosion and scale, an increased load on fluid-handling facilities, increased environmental concerns, and can eventually shut down the well. Controlling water production has been a major objective of the oil industry. A recrosslinked preformed particle gel (RPPG) has recently been developed and can provide a solution to controlling water production. When the RPPG is injected into formation through injection wells or production wells, the multiple compositions are transported as a single particle and are not released until the particle reaches the target area. The size of the particles can be tailored to millimeters, micrometers, or nanometers, depending on the specific need.

Benefits of Technology
- A single particle can be injected into high permeable formation to crosslink and form bulk gel.
- Particles can be various sizes (millimeter, micrometer, and nanometer)
- The bulk gel compositions are not released until the particle reaches the target area.
- The morphology of RPPG can be dry particle, wet particle, emulsion, or turbid liquid.
- Unlike in-situ gels, RPPG is not susceptible to the major problems of shear degradation, chromatography, and dilution.

Potential Commercial Applications
The recrosslinked preformed particle gel can be used in the oil industry as a solution for problems associated with conformance control, fluid loss control, and leakage blocking underground.

IP Status
Provisional Patent Filed
No. 61/996,150

Development Status
Developed and tested in the laboratory