Investigation of Polyacrylamide Gel for Water Cut Reducing in Crude Oil and Declining of Disposed Water as an extendable Pollutant

Water production in oil reservoirs is one of the most serious problems in the oil industry. Water soluble polymers with a suitable crosslinker have been successfully used to reduce water production in the field. This research was conducted to experimentally synthesis and evaluation of Partially Hydrolyzed Polyacrylamide (PHPA)/Chromium (III) gel polymer used as sealants to shut-off water production in one of the Iranian oil reservoir. The use of gelling systems as diverting agents or blocking agent is widely practiced today to improve production of oil and gas. These systems, which are typically composed of a water soluble polymer and crosslinker are dissolved in water and injected into the target zones. The polymer may be naturally such as xanthan biopolymer or synthetically such as polyacrylamide. The crosslinker may be metal ions or metallic complexes that bond ionically or by chelating to the polymer conditions. In this research, laboratory studies were conducted to synthesis and prepare optimum gel polymer using crosslinking reaction between PHPA as a water soluble polymer and chromium (III) acetate as a metallic crosslinking agent for saving the offshore and onshore ecosystems.

Crosslinking Agent, Gel polymer, Partially Hydrolyzed Polyacrylamide.

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