耐高温聚合物驱油机理研究

摘 要

随着三次采油技术的不断推进，提高采收率成为了现如今石油领域的主要研究问题之一，聚合物驱油技术作为化学驱提高采收率的主要方法，其拥有着良好的发展前景。近年来，由于受到经济发展的需要，油田开采时就要保证提高原油采收率的同时还要具有良好的经济效益。聚驱作为化学驱的主要方法，既可以解决原油采收率的问题，又可以达到良好的经济效益。但是由于常规聚合物的自身稳定性，在高温、高盐等条件下会发生氧化降解，剪切降解等问题，严重影响了高温、高盐等条件下的驱油效果。因此，为了保证油田的长期稳定产量，研究新型聚合物和耐高温聚合物具有重要意义。本文主要在对常规聚合物驱油效果影响因素分析基础上，研究了耐高温聚合物驱油机理及特性，并对耐高温聚合物进行注入性实验，分析其驱油效果，得出在高温条件下耐高温聚合物的驱油效果好于常规聚合物。

关键词：耐高温聚合物，驱油机理，影响因素，驱油性能。

Abstract

With the continuous advancement of eor technology, eor has become one of the main research issues in the field of petroleum today. As the main method of eor enhanced by chemical flooding, polymer flooding technology has a good development prospect. In recent years, due to the need of economic development, oil fields should ensure to improve the oil recovery rate and have good economic benefits at the same time. As the main method of chemical flooding, polymer flooding can not only solve the problem of oil recovery, but also achieve good economic benefits. However, due to the self-stability of conventional polymer, oxidative degradation and shear degradation will occur under high temperature and high salt conditions, which will seriously affect the oil displacement under high temperature and high salt conditions. Therefore, in order to ensure the long-term stable production of oil fields, it is of great significance to study new polymers and high temperature resistant polymers. Based on the analysis of the influencing factors of conventional polymer flooding effect, the mechanism and characteristics of high-temperature resistant polymer flooding were studied in this paper, and the injectivity experiment of high-temperature resistant polymer was carried out to analyze its oil displacement effect, and it was concluded that the oil displacement effect of high-temperature resistant polymer under high temperature conditions was better than that of conventional polymer.

Key words: high temperature resistant polymer, oil displacement mechanism, influencing factors, oil displacement performance.