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Publication date:
2017

Document Version
Publisher's PDF, also known as Version of record

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Di-Methyl Ether (DME) is a potential EOR fluid that can be used at either the secondary or tertiary EOR stage. The DME is injected in solution in brine, but is preferentially soluble in the reservoir oil, so when it contacts with the oil, it transfers, causing the oil to swell and mobilise. An understanding of the changes, in both the brine and oil, when mixed with DME is therefore very useful in interpreting core flood data.

Tests have been carried out using a simple flow set-up to determine the density of the fluids at the Dan reservoir conditions of 60°C and 190bar. The density of both the brine and the oil were found to change linearly with DME concentration, although brine tests were limited at 10% maximum solubility.