

Application of various water soluble polymers in gas hydrate inhibition - DTU Orbit (08/11/2017)

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Formation of hydrates in gas transmission lines due to high pressures and low temperatures is a serious problem in the oil and gas industry with potential hazards and/or economic losses. Kinetic hydrate inhibitors are water soluble polymeric compounds that prevent or delay hydrate formation. This review presents the various types of water soluble polymers used for hydrate inhibition, including conventional and novel polymeric inhibitors along with their limitations. The review covers the relevant properties of vinyl lactam, amide, dendrimeric, fluorinated, and natural biodegradable polymers. The factors affecting the performance of these polymers and the structure-property relationships are reviewed. A comprehensive review of the techniques used to evaluate the performance of the polymeric inhibitors is given. This review also addresses recent developments, current and future challenges, and field applications of a range of polymeric kinetic hydrate inhibitors.

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Authors: Kamal, M. S. (Ekstern), Hussein, I. A. (Ekstern), Sultan, A. S. (Ekstern), von Solms, N. (Intern)

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