

Gas Hydrate Phase Behavior in Presence of Organics and Electrolytes

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In this contribution, the effects of electrolytes on the phase behaviour of carbon dioxide hydrate forming systems are presented. The phase behaviour of the simple carbon dioxide hydrate system, the mixed carbon dioxide - tetrahydrofuran (THF) hydrate system, and, finally, the effect on the phase behaviour of different overall concentrations of sodium chloride will be elucidated. In addition, the competing effects between THF and an electrolyte of the metal halide series and their impacts on the phase behaviour of the hydrate forming systems will be discussed. The strength of hydrate inhibition by metal halides is compared and, a quantitative analyses between the effect of anions and cations is made in order to gain some understanding on the mechanism of electrolyte inhibition on hydrate formation.