

Phase Equilibria and Structural Characteristics of the Mixed t-BuNH₂ + CH₄ Hydrate

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The tertiary butylamine hydrate, 16(CH₃)₃CNH₂·156H₂O, with type VI structure is a true clathrate (Jeffrey, 1984); there is no evidence of hydrogen-bonding between the amine molecule and the water framework. In this work, the mixed hydrate formation and structure were measured by using spectroscopic methods such as NMR and XRD. These two spectroscopic measurements made it sure that P-T equilibrium results were show good agreement with hydrate structure So there data can be very helpful to understand the basic phase behavior of gas hydrate. Methane is main component in the natural gas, so these results also can be used to separation process by using natural gas hydrate.