



Phase Equilibria of Hydrates of Furan, Acetone, 1,4-dioxane, Tetra n-Butyl Ammonium Chloride and Tetra n-Butyl Ammonium Floride

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Abstract

In this communication, we first report experimental hydrate dissociation pressures for the methane/ carbon dioxide + furan/ acetone/ 1,4-dioxane + water and the methane + tetra n-butyl ammonium chloride (TBAC) + water as well as the methane /carbon dioxide + tetra n-butyl ammonium floride (TBAF) + water systems in the temperature ranges of (269.9 to 303.3) K. An isochoric pressure-search method was used to generate the experimental data. The hydrate dissociation data are compared with the corresponding literature data and the predictions of a previously reported thermodynamic model and acceptable agreement is observed.

Keywords: Gas hydrate, clathrate hydrate, acetone, 1,4-dioxane, furan, TBAC, TBAF.

Research Highlights

- Experimental hydrate dissociation conditions are reported for CO₂/methane + furan/ acetone/ 1,4-dioxane/ TBAC/TBAF.
- An isochoric pressure-search method was used to generate the experimental data.
- The new data are compared with the corresponding literature data and the predictions of a model.