Spectroscopic analysis of the binary (amyl alcohol + gaseous methane) hydrates

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Because simple alcohols such as methanol and ethanol are well known to a kind of thermodynamic inhibitor for hydrate formation, much research about alcohol has been performed in hydrate fields. However, the relationship between hydroxyl group and hydrophobic ends in alcohols cannot be easily described as the number of hydrocarbon groups in alcohols increases. Here, in order to clarify the effects of alcohol guest molecules on clathrate hydrates, we attempt to synthesize the various (amyl alcohol + CH_4) hydrates, and analyze the structural characteristics of binary (amyl alcohol + CH_4) hydrates using solid-state NMR and Raman.