

148ag Prediction of the Dissociation Condition of a Simple Hydrate Phase on an H-Lw-V Line in Isochoric Operation

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Dissociation behaviors of a system including a simple hydrate phase is different according to the condition under which the system lie. If the system is under isobaric condition and initial state is H-V coexistence, with increasing temperature, temperature and pressure of the system change along a isobaric line and at the intersection between the isobaric line and a H-Lw-V equilibrium line, hydrate dissociation begins and the system stays at the point until all hydrate phase disappears. On the other hand, if the system lies under isochoric condition, with increasing temperature, a representative point of the system first moves along a H-V equilibrium line and at the intersection between the H-V equilibrium line and the H-Lw-V equilibrium line hydrate dissociation starts. As temperature is successively increased, the state of the system changes along the H-Lw-V equilibrium line, and when the hydrate phase disappears, the representative point of the system leaves the H-Lw-V line and shifts to a V-Lw line. This location on the H-Lw-V equilibrium line was named the dissociation condition of hydrates and has been considered as a hydrate equilibrium point. In this study, The dissociation conditions were calculated based upon the van der Waals-Platteeuw model (vP model) and the PR EOS + MHV2 model and the vP + SRK EOS + MHV2 model and both results were compared with experimental results.