

عنوان مقاله:

Effect of various types of equations of state for prediction of gas consumption in simple gas hydrate formation with or without presence of kinetic inhibitors in a flow mini-loop apparatus

محل انتشار:

ششمین کنگره بین المللی مهندسی شیمی (سال: 1388)

تعداد صفحات اصل مقاله: 8

نویسنده:

M. R Talaghat - Fars Technological and Environmental Research Center, Shiraz, Iran

خلاصه مقاله:

This paper compares the effects of using various types of equations of state (1PR, 2SRK, 3ER, 4PT and 5VPT) on the calculated driving force and rate of gas consumption based on the Kashchiev and Firoozabadi model in simple gas hydrate formation for methane, carbon dioxide, propane and iso-butane with experimental data points obtained in a flow mini-loop apparatus with or without the presence of kinetic inhibitors at various pressures and temperatures. For this purpose, a laboratory flow mini-loop apparatus was set up to measure gas consumption rate when a hydrate forming substance (such as C1, C3, CO2 and i-C4) is contacted with water in the absence or presence of dissolved inhibitor under suitable temperature and pressure conditions. In each experiment, a water blend saturated with pure gas is circulated up to a required pressure. Pressure is maintained at a constant value during experimental runs by means of the required gas make-up. The total average absolute deviation was found to be 15.4 %, 16.3 %, 15.8%, 17.8% and 17.4% for the PR, ER, SRK, VPT and PT equations of state for calculating gas consumption in simple gas hydrate formation presence and absence of kinetic hydrate inhibitors, respectively.

کلمات کلیدی:

gas consumption rate, inhibitors, equation of state, Kashchiev and Firoozabadi model, driving force, flow mini-loop apparatus

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/77367>

