

Adsorption Equilibrium of Methane, Hydrogen and their mixture gas on Activated Carbon

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Adsorption equilibrium of CH₄, H₂ and mixture gas were measured to use the static volumetric method at 293.15k, 303.15k and 313.15k. The experiment was performed to use the activated carbon as an adsorbent(Calgon co.) and the mixture gas (hydrogen 80%, methane 20%) as an adsorbate. Adsorption data of pure gas are correlated using Langmuir, Langmuir-Freundlich and Toth, Unilan isotherm equation. The experiment data were fitted very well with Langmuir-Freundlich isotherm equations. Binary component adsorption could be predicted from the parameters obtained single component adsorption isotherm. Also binary component adsorption could be compared with experimental data.