

## Large-Scale PSA Process for Hydrogen Separation from Gas Mixture

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For large scale separation hydrogen from different mixing ratio(60/40 and 80/20 vol.%) of hydrogen and methane 1Nm<sup>3</sup>/hr and 4Nm<sup>3</sup>/hr 2bed-6step pressure swing adsorption(PSA) process was used, respectively. The effects of the feed gas pressure, adsorption time, the feed flow rate and the P/F(purge to feed) ratio on the process performance were evaluated. In the 1Nm<sup>3</sup>/hr PSA results, 11atm adsorption pressure and 0.10 P/F ratio might be optimal values to obtain more than 75% recovery and 99% purity hydrogen in these processing. The optimum feed flowrate was 22LPM and 17LPM in the ratio 60/40 and 80/20, respectively. In the 4Nm<sup>3</sup>/hr PSA results, 10atm adsorption pressure might be simulated values to obtain more than 80% recovery and 99% purity hydrogen in these processing.