

isosteric enthalpy of adsorption

When the addition of the differential amount of component i dn_i^σ or dn_i^s is effected at constant pressure p , the differential molar enthalpy of adsorption, $\Delta_a H_i^\sigma$ or $\Delta_a H_i^s$ also called the isosteric enthalpy of adsorption (q^{st}) is defined as:

$$\Delta_a H_i^\sigma = -q^{\text{st}, \sigma} = U_i^\sigma - H_i^g$$

$$\Delta_a H_i^s = -q^{\text{st}, \sigma} = H_i^\sigma - H_i^g$$

where $H_i^s = (\partial H^s / \partial n_i^s)_{T, p, m, n_j^s}$ and H_i^g is the partial molar enthalpy of component i in the gas phase, i.e. $(\partial H^g / \partial n_i^g)_{T, p, n_i^g}$

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