**isosteric enthalpy of adsorption**

When the addition of the differential amount of component $i$ $dn_i^g$ 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:

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

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

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

**Source:**
PAC, 1972, 31, 577 (Manual of Symbols and Terminology for Physicochemical Quantities and Units, Appendix II: Definitions, Terminology and Symbols in Colloid and Surface Chemistry) on page 603