CO_3^{2-}, PO_4^{2-}, AsO_4^{3-}, CrO_4^{2-}, F^-, S^{2-}, $C_2O_4^{2-}$

$CaC_2O_4^{2-} \rightleftharpoons Ca^{2+} + C_2O_4^{2-}$ $\quad C_2O_4^{2-} + H^+ \rightleftharpoons HC_2O_4^-$

$BaSO_4 \rightleftharpoons Ba^{2+} + SO_4^{2-}$ $\quad SO_4^{2-} + H^+ \rightleftharpoons HSO_4^{2-}$

c(M) c(B)

Podmíněný součin rozpustnosti $K_s' = [M']^m \cdot [B']^n =$

$= [M]^m \cdot \alpha_{M(L)}^m \cdot [B]^n \cdot \alpha_{B(H)}^n = K_s \cdot \alpha_{M(L)}^m \cdot \alpha_{B(H)}^n$

α - koeficienty vedlejších reakcí

$\alpha_{M(L)} = \frac{[M']}{[M]} = \frac{1}{[M]}\{[M] + [ML] + [ML_2] + \cdots\} = 1 + \beta_{ML}[L] + \beta_{ML_2}[L]^2 \ldots$

$\alpha \geq 1$ $\qquad \beta_{ML} = \frac{[ML]}{[M][L]}$ $\qquad \beta_{ML_2} = \frac{[ML_2]}{[M][L]^2}$ celkové konstanty stability

Příklad: dvojsytná kyselina: $H_2B \rightleftharpoons HB^- + H^+$ $\quad K_1 = [H^+] \cdot \frac{[HB^-]}{[H_2B]}$

$HB^- \rightleftharpoons B^{2-} + H^+$ $\quad K_2 = [H^+] \cdot \frac{[B^{2-}]}{[HB^-]}$

$\alpha_{B(H)} = \frac{1}{[B]}\{[B] + [HB] + [H_2B]\} =$

$= \frac{1}{[B]}\left\{[B] + [B]\cdot[H]\cdot\frac{1}{K_2} + [HB]\cdot[H]\cdot\frac{1}{K_1}\right\} = \frac{1}{[B]}\left\{[B] + [B]\cdot[H]\cdot\frac{1}{K_2} + \right.$

$\left. + [B]\cdot[H]^2\cdot\frac{1}{K_1K_2}\right\} = 1 + \frac{[H]}{K_2} + \frac{[H]^2}{K_1K_2}$

Příklad: Jaká je rozpustnost CaF_2 v 0,01M-HCl? $K_{HF} = 6\cdot10^{-4}$, $K_s(CaF_2) = 4\cdot10^{-11}$, $F^- + H^+ \rightleftharpoons HF \Rightarrow \alpha_{F^-} = \left\{1 + \frac{[H^+]}{K_{HF}}\right\}$

$\alpha_F = 1 + (6\cdot10^{-4})^{-1}\cdot[10^{-2}] \doteq 18$; $\quad c(CaF_2) = \sqrt[3]{K_s'/4} = \sqrt[3]{K_s\cdot\alpha_F^2/4} =$

$= \sqrt[3]{K_s/4}\cdot\sqrt[3]{\alpha_F^2} = 2{,}16\cdot10^{-4}\cdot312^{1/3} = 2{,}15\cdot10^{-4}\cdot6{,}78 = 0{,}0015\ M$