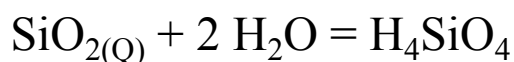


Rozpouštění křemene



Standartní hodnoty G (Robie):

$G^\circ_{(\text{H}_4\text{SiO}_4)}$	=	-1308000	J/mol
$G^\circ_{(Q)}$	=	-856288	J/mol
$G^\circ_{(\text{H}_2\text{O})}$	=	-237141	J/mol

Počáteční obsahy:

$\text{SiO}_{2(Q)}$	=	2.00E-02
voda (1 L)	=	5.56E+01
H_4SiO_4	=	0.00E+00

Termodynamika

$$G = \sum_i n_i G_i \quad G = \sum_i \left(n_i^0 + v_i \xi \right) \left(G_i^0 + RT \ln a_i \right)$$

$$G = G_{\text{SiO}_2(Q)} + 2 * G_{\text{H}_2\text{O}} + G_{\text{H}_4\text{SiO}_4}$$

$$G = \left(n_Q^0 + v_Q \xi \right) \left(G_Q^0 + RT \ln a_Q \right) + \left(n_w^0 + v_w \xi \right) \left(G_w^0 + RT \ln a_w \right) + \left(n_{\text{H}_4\text{SiO}_4}^0 + v_{\text{H}_4\text{SiO}_4} \xi \right) \left(G_{\text{H}_4\text{SiO}_4}^0 + RT \ln a_{\text{H}_4\text{SiO}_4} \right)$$

$$\Delta G = \frac{dG}{d\xi} = \sum_i v_i \left(G_i^0 + RT \ln a_i \right)$$

$$\Delta G = \frac{dG}{d\xi} = v_Q \left(G_Q^0 + RT \ln a_Q \right) + v_w \left(G_w^0 + RT \ln a_w \right) + v_{\text{H}_4\text{SiO}_4} \left(G_{\text{H}_4\text{SiO}_4}^0 + RT \ln a_{\text{H}_4\text{SiO}_4} \right)$$

$$K = e^{\frac{-\Delta G_r^0}{RT}}$$

vypočtěte!!!!

ζ	n_Q [mol]	n_w [mol]	$n_{\text{H}_4\text{SiO}_4}$ [mol]	a_Q	a_w	$a_{\text{H}_4\text{SiO}_4}$

mol zlomek $\sim n_{\text{H}_4\text{SiO}_4}$

|

|

mol
 mol
 mol

$$+ RT \ln a_w) + (n_{H_4SiO_4}^0 + v_{H_4SiO_4} \xi) (G_{H_4SiO_4}^0 + RT \ln a_{H_4SiO_4})$$

$$T \ln a_w) + v_{H_4SiO_4} (G_{H_4SiO_4}^0 + RT \ln a_{H_4SiO_4})$$

afinita -ΔG		
G [J/mol]	ΔG [J/mol]	A [J/mol]

vyneste do grafu celkovou Gibbsovu funkci

vyneste do grafu hodnoty afinity reakce!!!!

Rovnováha (J/mol):

RT	2478.941	J/mol
ΔG_r^0		vypočtete!!!
K		vypočtete!!!

i systému!!!