

2.2.1 Examples for activities

With $m_+ = \nu_+ m_B$, and $m_- = \nu_- m_B$ we get from Eq. (2.13)

$$a_B = \left(\gamma_{\pm} \left(\frac{m_{\pm}}{m^0} \right) \right)^{\nu} = \gamma_{\pm}^{\nu} \frac{(\nu_+ m_B)^{\nu_+} (\nu_- m_B)^{\nu_-}}{(m^0)^{\nu}} \quad . \quad (2.14)$$

- NaCl:

$$a_{\text{NaCl}} = a_{\text{Na}^+} a_{\text{Cl}^-} = \gamma_{\pm}^2 \frac{(m_{\text{NaCl}})^2}{(m^0)^2} \quad . \quad (2.15)$$

- $\text{Fe}(\text{ClO}_4)_3$:

$$\begin{aligned} a_{\text{Fe}(\text{ClO}_4)_3} &= a_{\text{Fe}^{3+}} (a_{\text{ClO}_4^-})^3 \\ &= \gamma_{\pm}^4 \frac{m_{\text{Fe}(\text{ClO}_4)_3} (3 m_{\text{Fe}(\text{ClO}_4)_3})^3}{(m^0)^4} = \gamma_{\pm}^4 \frac{27 (m_{\text{Fe}(\text{ClO}_4)_3})^4}{(m^0)^4} \quad ; \end{aligned} \quad (2.16)$$

here $m_{\text{Fe}^{3+}} = m_{\text{Fe}(\text{ClO}_4)_3}$ and $m_{\text{ClO}_4^-} = 3 m_{\text{Fe}(\text{ClO}_4)_3}$ has been used.

Thus the key-point is always how to calculate (or measure) γ_{\pm} .