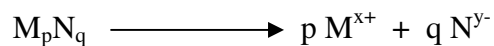


Chemical Potentials for Electrolyte Solutions

Electrolyte Dissociation



Ionic Potentials

$$\mu = p \mu_+ + q \mu_-$$

$$\mu_+ = \mu_+^{***} + RT \ln a_+$$

$$\mu_- = \mu_-^{***} + RT \ln a_-$$

$$\mu^{***} = p \mu_+^{***} + q \mu_-^{***}$$

Activities

$$a_+ = \gamma_+ m_+$$

$$a_- = \gamma_- m_-$$

Mean Ionic Potential

$$\mu_{\pm} = \frac{(p\mu_+ + q\mu_-)}{s}$$

$$\mu_{\pm} = \mu_{\pm}^{***} + RT \ln a_{\pm}$$

$$\mu_{\pm}^{***} = \frac{(p\mu_+^{***} + q\mu_-^{***})}{s}$$

Activities

$$a_{\pm} = \gamma_{\pm} m_{\pm}$$

$$a_{\pm}^s = a_+^p a_-^q$$

$$m_{\pm}^s = m_+^p m_-^q$$

$$\gamma_{\pm}^s = \gamma_+^p \gamma_-^q$$

$$\mu = s \mu_{\pm}$$

$$= s \mu_{\pm}^{***} + RT \ln (p^p q^q) + RT \ln \gamma_{\pm}^s + RT \ln m^s$$