

## Errata

### Chapter 2 Essential chemistry concepts

On page 58, top right column; replace with the following text:

Free energy calculations allow us to predict whether or not a chemical reaction will occur. When  $\Delta G = 0$ , the reaction is at equilibrium. If  $\Delta G < 0$  (i.e., a negative value), the reaction will occur spontaneously or proceed in the forward direction as written. If  $\Delta G > 0$  (i.e., a positive value), the reaction will not occur spontaneously in the forward direction, but will proceed in the reverse.

On page 82, second column, replace Equations (2.114) and (2.115) with the following:

$$[A^{Y+}]^Z [B^{Z-}]^Y = K \times K_s = K_{sp} \quad (2.114)$$

$$K = \frac{[A^{Y+}]^Z [B^{Z-}]^Y}{[(A_Z B_Y)_{(s)}]} = \frac{[A^{Y+}]^Z [B^{Z-}]^Y}{K_s} \quad (2.115)$$

When  $[A^{Y+}]^Z [B^{Z-}]^Y = K_{sp}$ , the solution is saturated or at equilibrium.

When  $[A^{Y+}]^Z [B^{Z-}]^Y < K_{sp}$ , the solution is under-saturated and no solids species are present.

When  $[A^{Y+}]^Z [B^{Z-}]^Y > K_{sp}$ , the solution is super-saturated and solid species are being formed.