**Equilibrium in Solutions of**

**Weak Acids**

**It’s important to realize that a weak acid is not the same thing as a dilute solution of a strong acid.**

**Remember strong acids dissociate 100 % in aqueous solutions and weak acids only partially dissociate.**

**It might therefore happen that [H3O+] from complete dissociation of a dilute strong acid is the same as that from partial dissociation of a more concentrated weak acid.**

**Because the dissociation of a weak acid in water will eventually reach equilibrium (the state when the concentration of reactants and products remain constant over time).**

**Like any equilibrium reaction, the dissociation of a weak acid in water can be shown with an equilibrium equation and the Acid – Dissociation Constant (Ka).**

**HA (aq) + H2O (l) H3O+ (aq) + A- (aq)**

**Ka = [H3O][A-]**

**[HA]**

**Remember water can be omitted from the Ka equation because its concentration is dilute solutions is essentially the same as that in pure water (55.4 M: from calculating Kw using water’s density and molar mass) and pure liquids are always omitted from equilibrium equations.**