

$$= -523,030 \text{ J} = -523 \text{ kJ}$$

$$K = e^{-\Delta G^\circ/RT}$$

Mon Apr 22

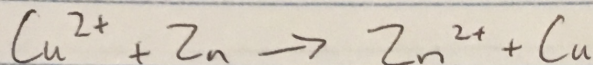
Using the Nernst Equation

$$\Delta G = -nFE$$

$$\Delta G = \Delta G^\circ + RT \ln Q$$

$$-nFE = -nFE^\circ + RT \ln Q$$

$$Q = \frac{[Zn^{2+}]}{[Cu^{2+}]}$$



Determine the cell potential after the rxn has proceeded enough for the $[Zn^{2+}]$ to change by 0.35 mol/L at 25°C

~~2.20~~

$$E = E^\circ - \frac{RT \ln Q}{nF}$$

$$E = E^\circ - \frac{2.303 RT}{nF} \log Q$$

$$E = E^\circ - \frac{0.0592 \text{ V}}{n} \log Q$$

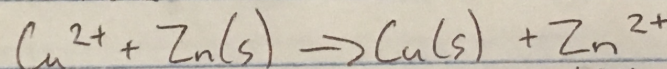
E = cell potential at non-STD conditions

E° = cell potential at STD conditions

@ $25^\circ\text{C} \Rightarrow$
(STD T)

Start @ STD conditions

$$[Zn^{2+}] = [Cu^{2+}] = 1.0 \text{ M}$$



$$\begin{array}{r} 1.0 \text{ M} \\ - 0.35 \text{ M} \\ \hline 0.65 \text{ M} \end{array}$$

$$\begin{array}{r} 1.0 \text{ M} \\ + 0.35 \text{ M} \\ \hline 1.35 \text{ M} \end{array}$$

over $\rightarrow$